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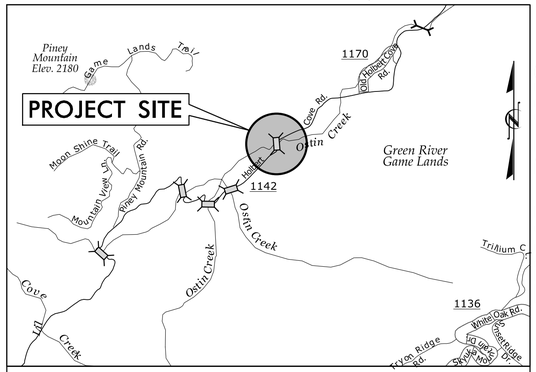
09/08/99

PROJECT: 17BP.14.R.116

CONTRACT: DN00283

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

N.T.S.

FINAL PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

POLK COUNTY

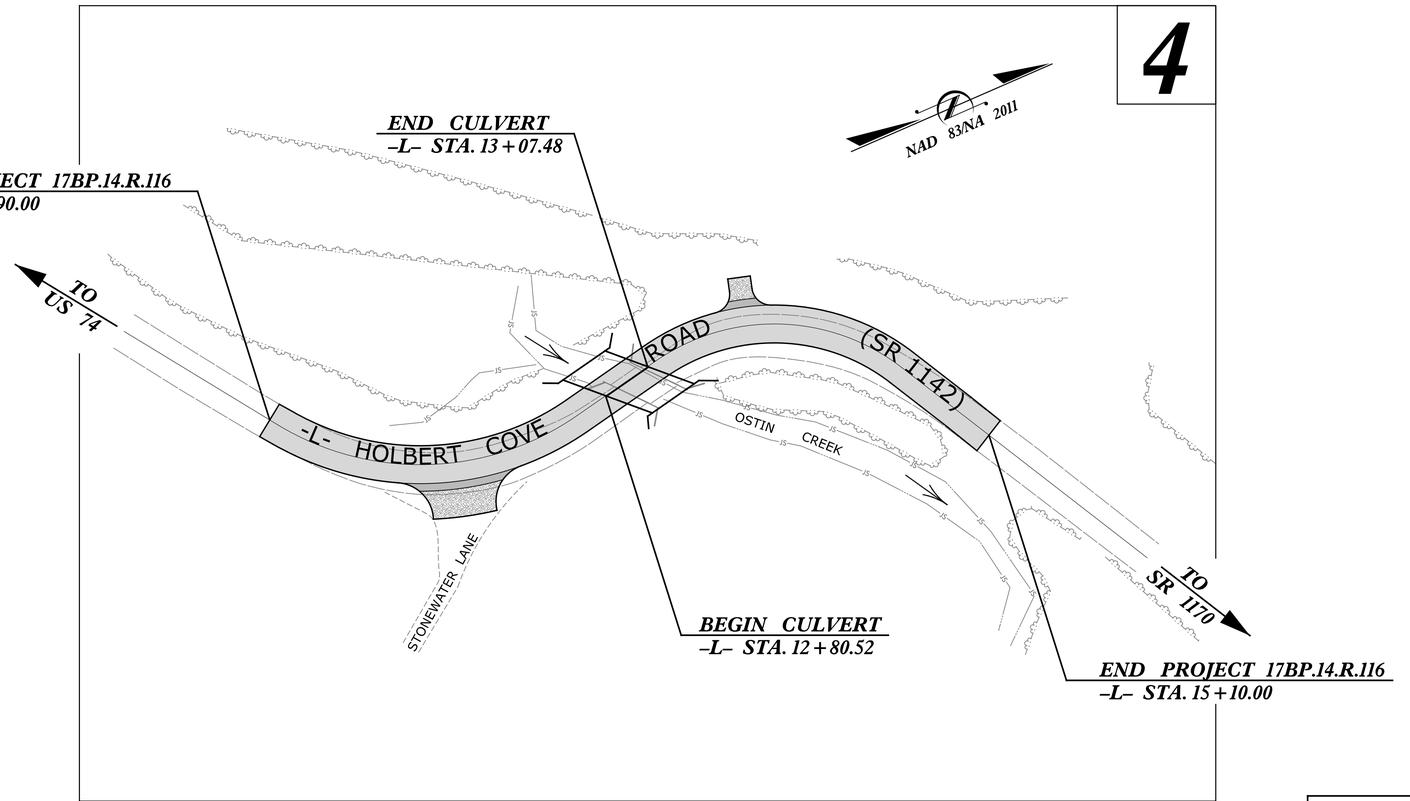
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.116	1	
POLK COUNTY		CULVERT #740125	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.14.R.116		PE
17BP.14.R.116		R/W
17BP.14.R.116		CONST

LOCATION: BRIDGE #740125 OVER OSTIN CREEK ON SR 1142 (HOLBERT COVE ROAD)

TYPE OF WORK: PAVING, GRADING, DRAINAGE & CULVERT

4

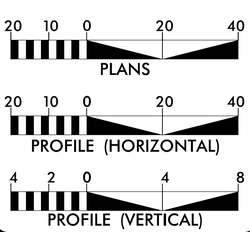


NCDOT CONTACT:
HIGHWAY DIVISION 14 BRIDGE MANAGER
ADAM DOCKERY, P.E.
(828) 488–0902

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT (2010)	=	310
DHV	=	NA
D	=	NA
T	=	6%
V	=	20 MPH
* TTST = NA		DUAL NA
FUNC CLASS =		RURAL LOCAL (SUBREGIONAL)

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT 17BP.14.R.116	=	0.075 MILES
LENGTH OF CULVERT PROJECT 17BP.14.R.116	=	0.005 MILES
TOTAL LENGTH PROJECT 17BP.14.R.116	=	0.080 MILES

Plans Prepared By:

AMERICAN Engineering

AMERICAN ENGINEERING ASSOCIATES - SOUTHEAST, PA
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
PHONE: 704-375-2438
NC Lic. No. C-3881

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 29, 2015

LETTING DATE:
MARCH 12, 2019

ALLISON C. JOHNSON, P.E.
PROJECT ENGINEER

BENJAMIN C. PICKERING II, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 40801 ENGINEER PAUL H CAMERON

DocuSigned by: Paul Cameron 2/14/2019
SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041650 ENGINEER BENJAMIN C PICKERING II

DocuSigned by: Benjamin Pickering 2/13/2019
SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	1A
POLK COUNTY	CULVERT #740125

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041650 ENGINEER BENJAMIN C. PICKERING, II

DocuSigned by:
1/30/2019

Plans Prepared By:

AMERICAN Engineering
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
NC Lic. No. C-3881

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES AND LIST OF STANDARDS
1B	CONVENTIONAL SYMBOLS
1C-1	SURVEY CONTROL SHEET
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTION
2B-1	25'-0" CLEAR SPAN GUARDRAIL PLACEMENT
3B-1	SUMMARY OF DRAINAGE, GUARDRAIL SUMMARY, SUMMARY OF EARTHWORK AND PARCEL INDEX SHEET
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-4	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING & SIGNING PLAN
EC-1 THRU EC-5	EROSION CONTROL PLANS
EC-RF-1	REFORESTATION DETAIL SHEET
X-1A	INDEX OF SHEETS & SUMMARY OF CROSS SECTIONS
X-1 THRU X-4	CROSS-SECTIONS
C-1 THRU C-5	CULVERT PLANS
SN	CULVERT PLANS - STANDARD NOTES

GENERAL NOTES

GENERAL NOTES: 2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.03 AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE WINDSTREAM COMMUNICATIONS & DUKE ENERGY

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS. SEE UTILITY SPECIAL PROVISIONS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT IN ACCORDANCE WITH SECTION 801 OF THE 2018 NORTH CAROLINA STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

STANDARD DRAWINGS

EFF. 01-16-2018

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-Of-Way Marker
806.02	Grantie Right-Of-Way Marker
848.03	Driveway Turnout
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

12/05/11

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	1B

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H–Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	1C-1
Location and Surveys	

SURVEY CONTROL SHEET 74-0125
-FINAL-

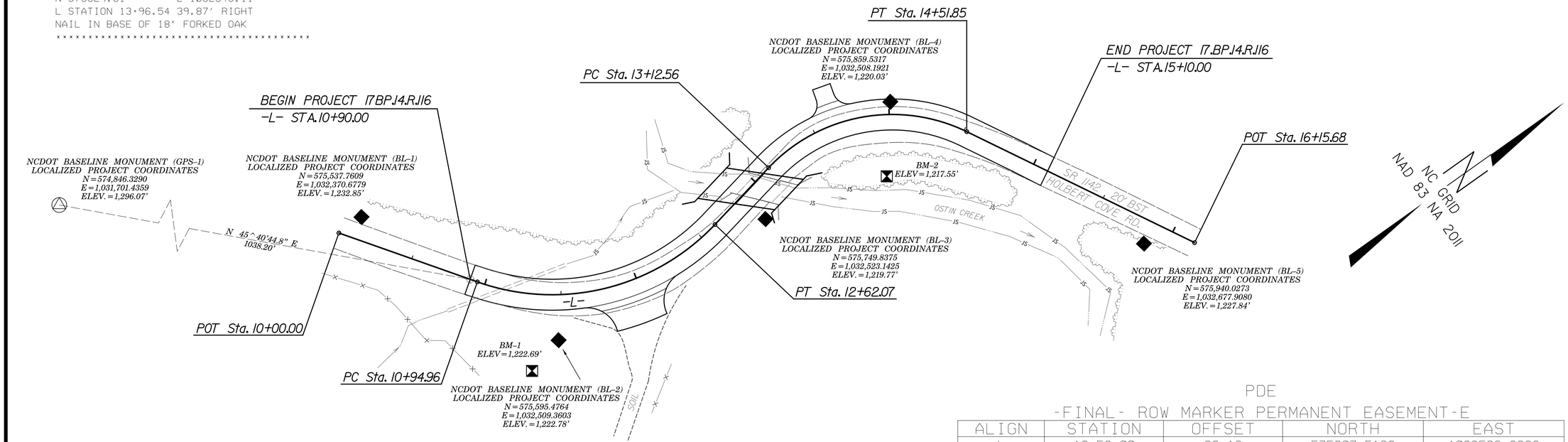
BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	575537.7609	1032370.6779	1232.85	10+10.34	14.56 LT
2	BL-2	575595.4764	1032509.3603	1222.78	11+47.66	29.44 RT
3	BL-3	575749.8375	1032523.1425	1219.77	12+87.04	21.31 RT
4	BL-4	575859.5317	1032508.1921	1220.03	14+00.85	8.18 LT
5	BL-5	575940.0273	1032677.9080	1227.84	15+86.54	14.92 RT

****
BM1 ELEVATION = 1222.69
N 575570.02 E 1032515.62
L STATION 11+34.53 49.67' RIGHT
NAIL IN BASE OF 10" SYCAMORE
****
****
BM2 ELEVATION = 1217.55
N 575829.81 E 1032546.11
L STATION 13+96.54 39.87' RIGHT
NAIL IN BASE OF 18" FORKED OAK
****

-FINAL- ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+51.00	-18.20	575708.1294	1032490.7207
L	12+52.00	-41.00	575706.1453	1032467.9982
L	12+97.00	-41.00	575747.5427	1032460.0819
L	14+00.00	-33.00	575872.7969	1032487.1877
L	14+50.00	-33.00	575916.4161	1032534.6231
L	15+07.00	-33.00	575943.9988	1032585.1363
L	15+07.00	-24.89	575936.8768	1032589.0256
L	13+56.00	32.18	575807.5132	1032528.9398
L	12+84.00	38.00	575750.0883	1032540.1039
L	12+84.00	32.00	575748.9263	1032534.2175



PDE

-FINAL- ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+56.00	32.18	575807.5132	1032528.9398
L	13+45.00	53.00	575797.7428	1032548.4945
L	13+12.00	55.00	575780.8505	1032551.3594
L	12+84.00	38.00	575750.0883	1032540.1039

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "740125 GPS-1" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 574846.3290(ft) EASTING: 1031701.4359(ft) ELEVATION: 1296.07(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99981664
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "740125 GPS-1" TO -L- STATION 10+90.00 IS N 45°40'44.8" E 1038.20 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

-L- FINAL

TYPE	STATION	NORTH	EAST
POT	10+00.00	575519.9034	1032370.6026
PC	10+94.96	575574.5497	1032448.2603
PT	12+62.07	575721.2141	1032507.0704
PC	13+12.56	575770.7486	1032497.2922
PT	14+51.85	575888.6144	1032552.5255
POT	16+15.68	575967.0826	1032696.3468

GEOID MODEL - G12ANC
NOTE: DRAWING NOT TO SCALE

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT: HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/*

   THE FILES TO BE FOUND ARE AS FOLLOWS: 740125_LS_CONTROL.TXT

   SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

△ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	2A–1
POLK COUNTY	CULVERT #740125
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041650 ENGINEER BENJAMIN C. PICKERING, II

DocuSigned by: EE60310D228540F... 1/30/2019

Plans Prepared By:
AMERICAN Engineering
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
NC Lic. No. C-3881

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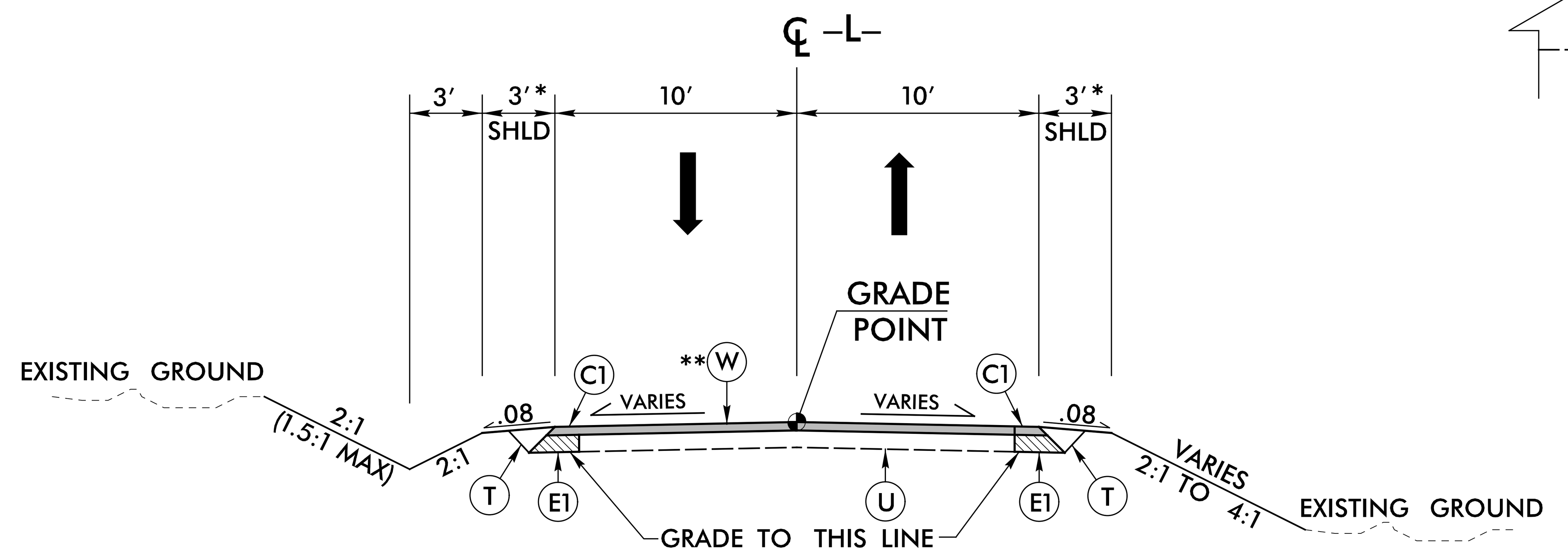
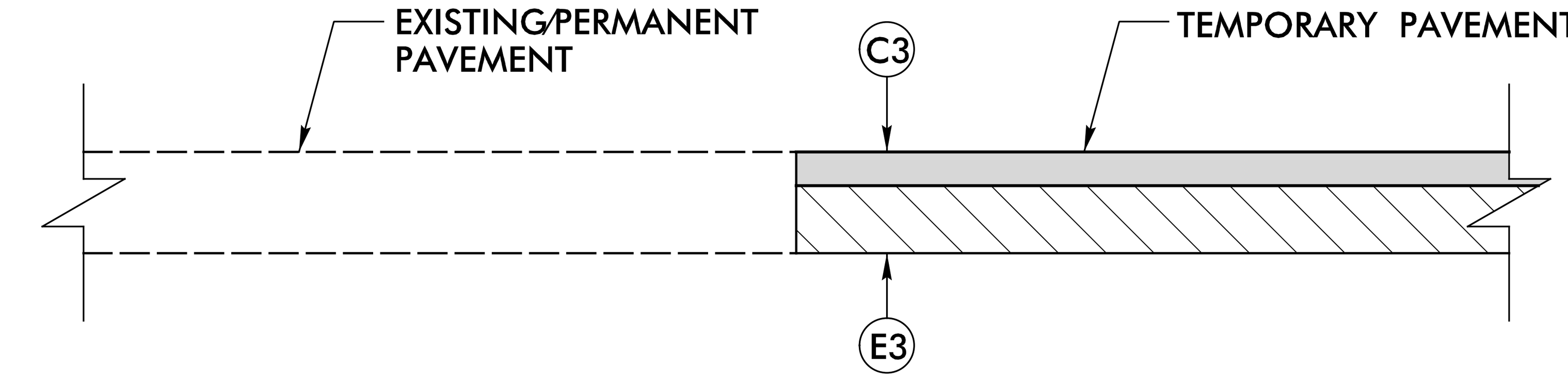


TYPICAL SECTION NO. 1

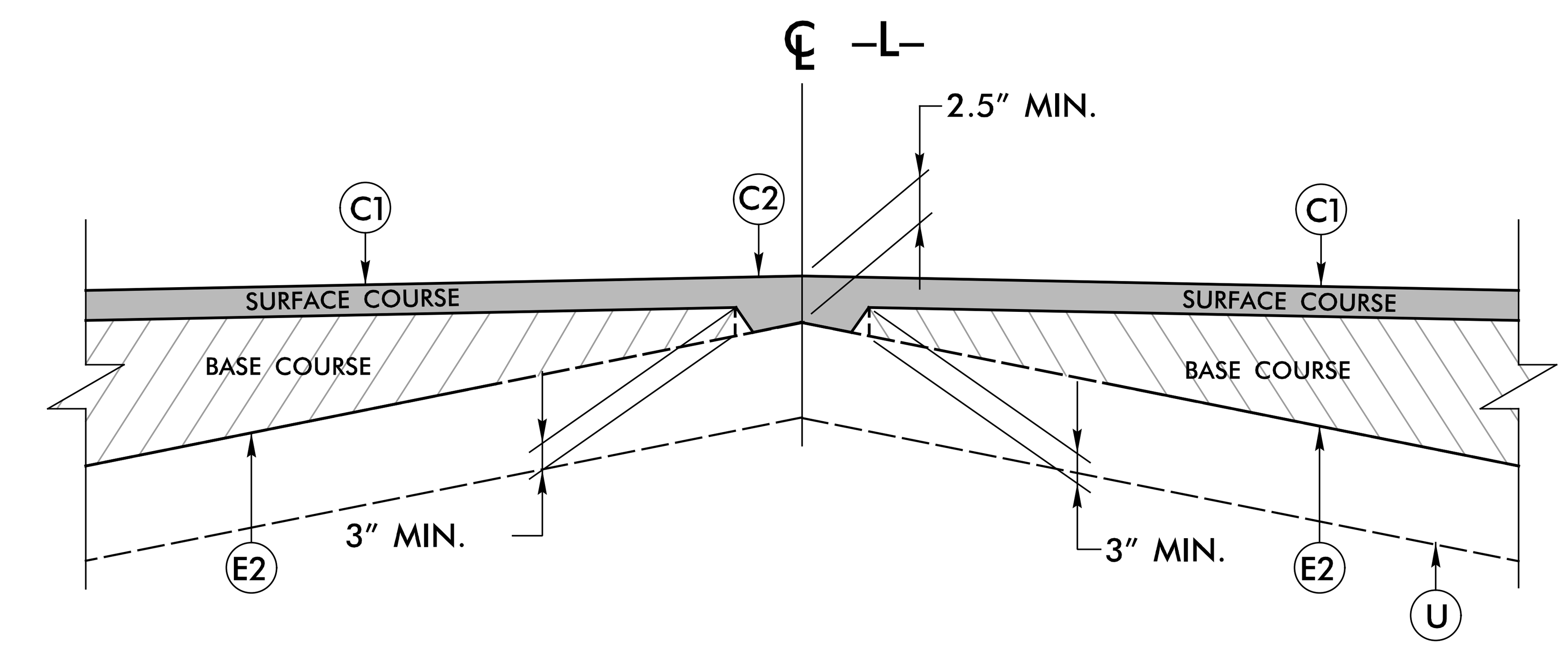
–L– STA. 10 + 90.00 TO STA. 12 + 65.00
–L– STA. 13 + 25.00 TO STA. 15 + 10.00

NOTE: SEE PLAN FOR SUPERELEVATION RATES AND TRANSITIONS
* 6′–0″ WITH GUARDRAIL



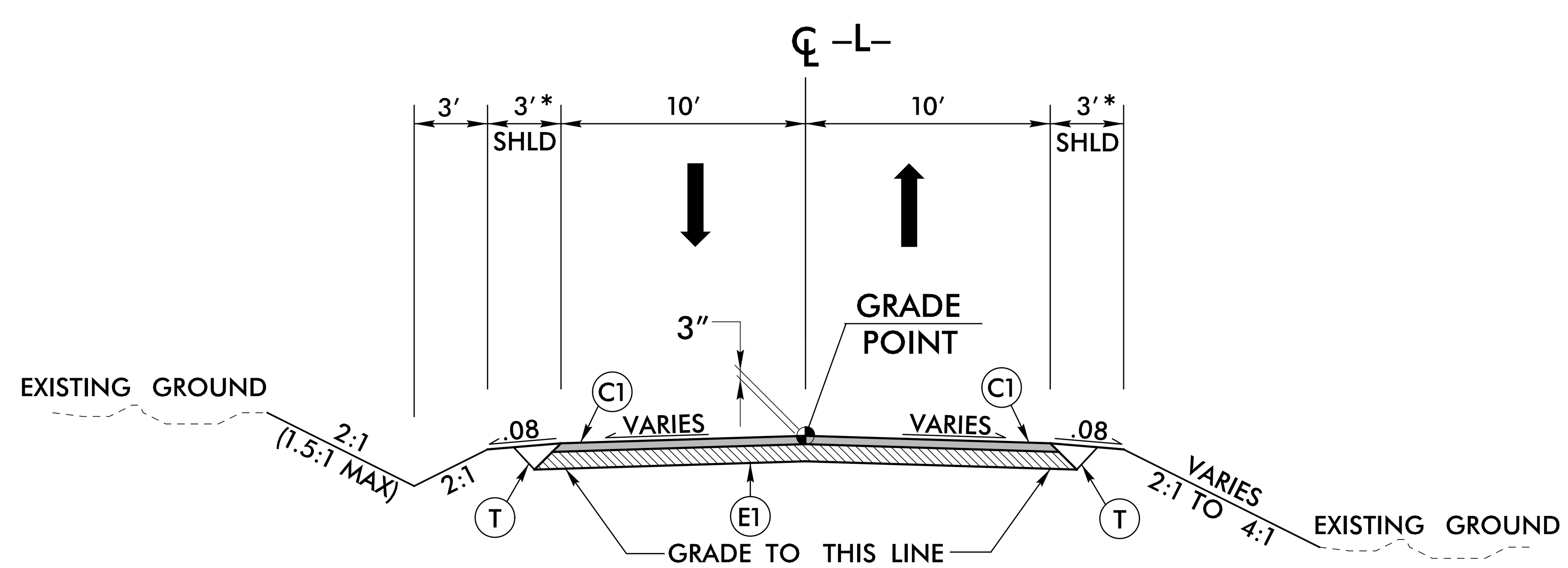
TEMPORARY PAVEMENT DETAIL

NOT TO SCALE
(SEE TRAFFIC CONTROL PLANS)



**DETAIL SHOWING METHOD OF WEDGING (W)

NOT TO SCALE



TYPICAL SECTION NO. 2

–L– STA. 12 + 65.00 TO STA. 13 + 25.00

NOTE: SEE PLAN FOR SUPERELEVATION RATES AND TRANSITIONS
* 6′–0″ WITH GUARDRAIL

PAVEMENT SCHEDULE

ITEM	DESCRIPTION
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO EQUAL LAYERS
C2	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1″ DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1½″ IN DEPTH.
C3	PROP. APPROX. 2″ ASPHALT CONCRETE BASE COURSE, TYPE SF9.5B, AT AN AVERAGE RATE OF 220 LBS. PER SQ. YD.
E1	PROP. APPROX. 5½″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3″ OR GREATER THAN 5.5″ IN DEPTH.
E3	PROP. APPROX. 3″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING – SEE DETAIL THIS SHEET

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

$$$$$$SYSTIME$$$$$ $$$$$$$$DGN$$$$$$$$$$$$$$$$ $$$$$$USERNAME$$$$

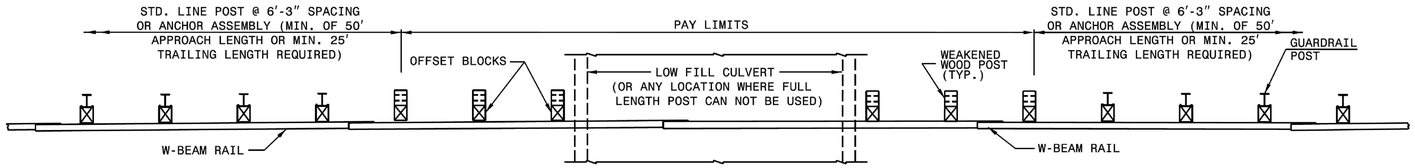
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	2B-1
POLK COUNTY	CULVERT #740125

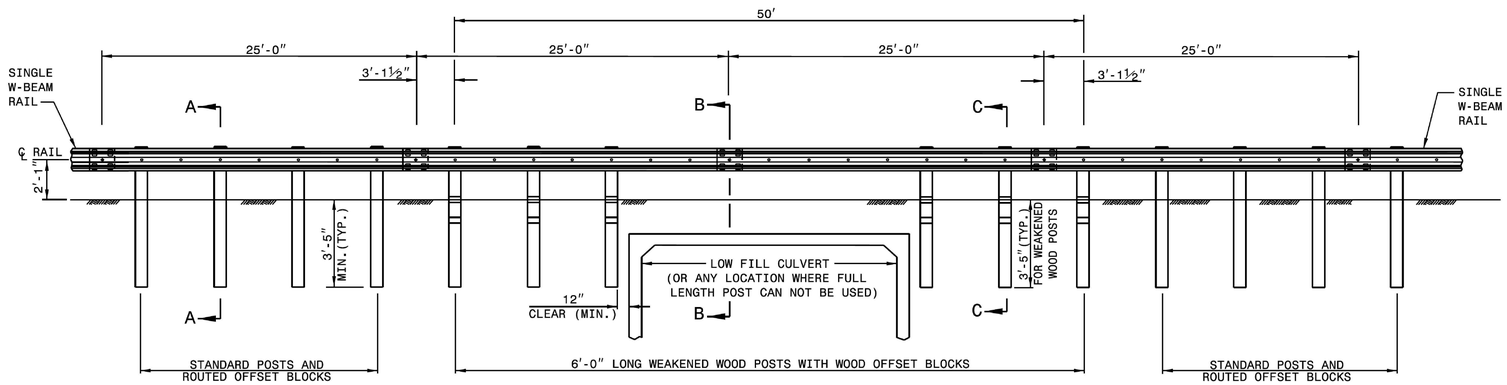
Plans Prepared By:
AMERICAN Engineering
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
NC Lic. No. C-3881

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

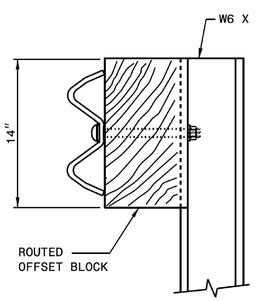
SPECIAL DETAIL FOR
GUARDRAIL PLACEMENT
25'-0" CLEAR SPAN



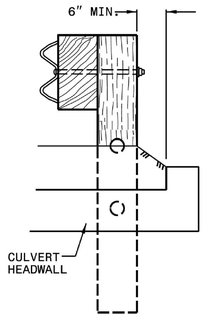
PLAN



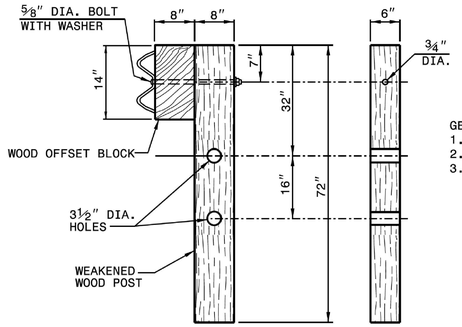
ELEVATION
25'-0" GUARDRAIL SPAN



SECTION A-A



SECTION B-B



SECTION C-C **FRONT**
WEAKENED WOOD POST

GENERAL NOTES:
1. LAP RAIL IN THE DIRECTION OF TRAFFIC FLOW.
2. SEE ROADWAY PLANS FOR LOCATIONS AND CONTINUATION OF RAIL OR END SECTIONS.
3. MINIMUM DISTANCE OF 5 FEET BEHIND THE GUARDRAIL SHOULD BE CLEAR OF ANY FIXED-OBJECT HAZARDS THAT COULD SNAG AN IMPACTING VEHICLE.

SHEET - OF -
862D01

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

SPECIAL DETAIL FOR
GUARDRAIL PLACEMENT
25'-0" CLEAR SPAN

SHEET - OF -
862D01

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

25'-0" CLEAR SPAN GUARDRAIL PLACEMENT

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

8/17/99

COMPUTED BY: BCP DATE: 1/25/19
CHECKED BY: DJW DATE: 1/25/19

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	3B–1
POLK COUNTY	CULVERT #740125

Plans Prepared By:
AMERICAN Engineering
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
NC Lic. No. C-3881

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SUMMARY OF EARTHWORK
(in Cubic Yards)

STATION	STATION	UNCL. EXCAV.	EMBANK.	BORROW	WASTE
PHASE 1					
–L– STA. 10+90	–L– STA. 15+10	92	289	197	0
PHASE 2					
–L– STA. 10+90	–L– STA. 15+10	56	120	64	0
PROJECT TOTALS:		148	409	260	0
TRAFFIC MANAGEMENT EMBANKMENT				53	
LOSS DUE TO CLEARING AND GRUBBING		–88		88	
T.M. EMBANKMENT TO REPLACE BORROW				–53	
PROJECT TOTALS		60	409	348	
ESTIMATE 5% FOR TOPSOIL ON BORROW PITS				17	
GRAND TOTALS:				365	0
SAY:		60		370	

EST UNDERCUT = 50 CY
EST SELECT GRANULAR MATERIAL = 50 CY

Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement, Drainage Ditch Excavation will be paid for at the contract lump sum price for "Grading".

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
L	11+10	11+75	RT	20.56
L	12+11	12+76	RT	43.89
L	13+41	15+10	RT	82.22
GRAND TOTALS:				146.67
SAY:				150

PARCEL INDEX SHEET

PARCEL NO.	SHEET NO.	PROPERTY OWNER NAMES
61	4	JOSEPH P. MANGAN
62	4	EARL D. HORNBECK & NANCY L. HORNBECK
63	4	SYLVIA M. MASON & JAMES E. MANSON, TRUSTEES

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL
–L– 13+63	LT.	0501					
TOTAL							

STATION	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	C.S. PIPE (UNLESS NOTED OTHRWISE) 12"	15"	18"	24"	24"	30"	30"	36"	36"	42"	42"	48"	48"
THICKNESS OR GAUGE									.064	.064	.064	.064		.079		.079		.109		.109	
–L– 13+63																					
TOTAL																					

STATION	CLASS III R.C. PIPE (UNLESS OTHERWISE NOTED) 12"	15"	18"	24"	30"	36"	42"	48"	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	
–L– 13+63										32											
TOTAL										32											

STATION	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32								CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
–L– 13+63																					31	
TOTAL																					31	

ABBREVIATIONS

- C.B. CATCH BASIN
- N.D.I. NARROW DROP INLET
- D.I. DROP INLET
- G.D.I. GRATED DROP INLET
- G.D.I. (N.S.) GRATED DROP INLET (NARROW SLOT)
- J.B. JUNCTION BOX
- M.H. MANHOLE
- T.B.D.I. TRAFFIC BEARING DROP INLET
- T.B.J.B. TRAFFIC BEARING JUNCTION BOX

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END
–L–	12+36	13+35	LT.	99					3	6				
–L–	12+54	13+55	RT.	101					3	6				
			SUBTOTALS	200										
			END UNIT DEDUCTION	–100										
			TOTAL	100										
			SAY	100										

LOCATION	ANCHORS GREU TYPE–III	B–77	GREU TL–2	GREU TL–3	CAT–1	AT–1	TYPE III SC	B–77 SC		IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
LT.			2													GUARDRAIL CALCULATED USING SUBREGIONAL TIER GUIDELINES
RT.			2													GUARDRAIL CALCULATED USING SUBREGIONAL TIER GUIDELINES
SUBTOTALS	DEDUCTIONS FOR GUARDRAIL END UNITS															
END UNIT DEDUCTION	GREU TYPE TL–2			4 @ 25.00' =		100'										
TOTAL																
SAY				TOTAL =		100'										

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	4
POLK COUNTY	CULVERT #740125
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 041650 ENGINEER BENJAMIN C. PICKERING, II — DocuSigned by: 1/30/2019 EE60310D228540F...	NORTH CAROLINA PROFESSIONAL SEAL 40801 ENGINEER PAUL H. CAMERON — DocuSigned by: Paul Cameron 1/30/2019 8382D9B58C3240F...

Plans Prepared By:

AMERICAN Engineering
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
NC Lic. No. C-3881

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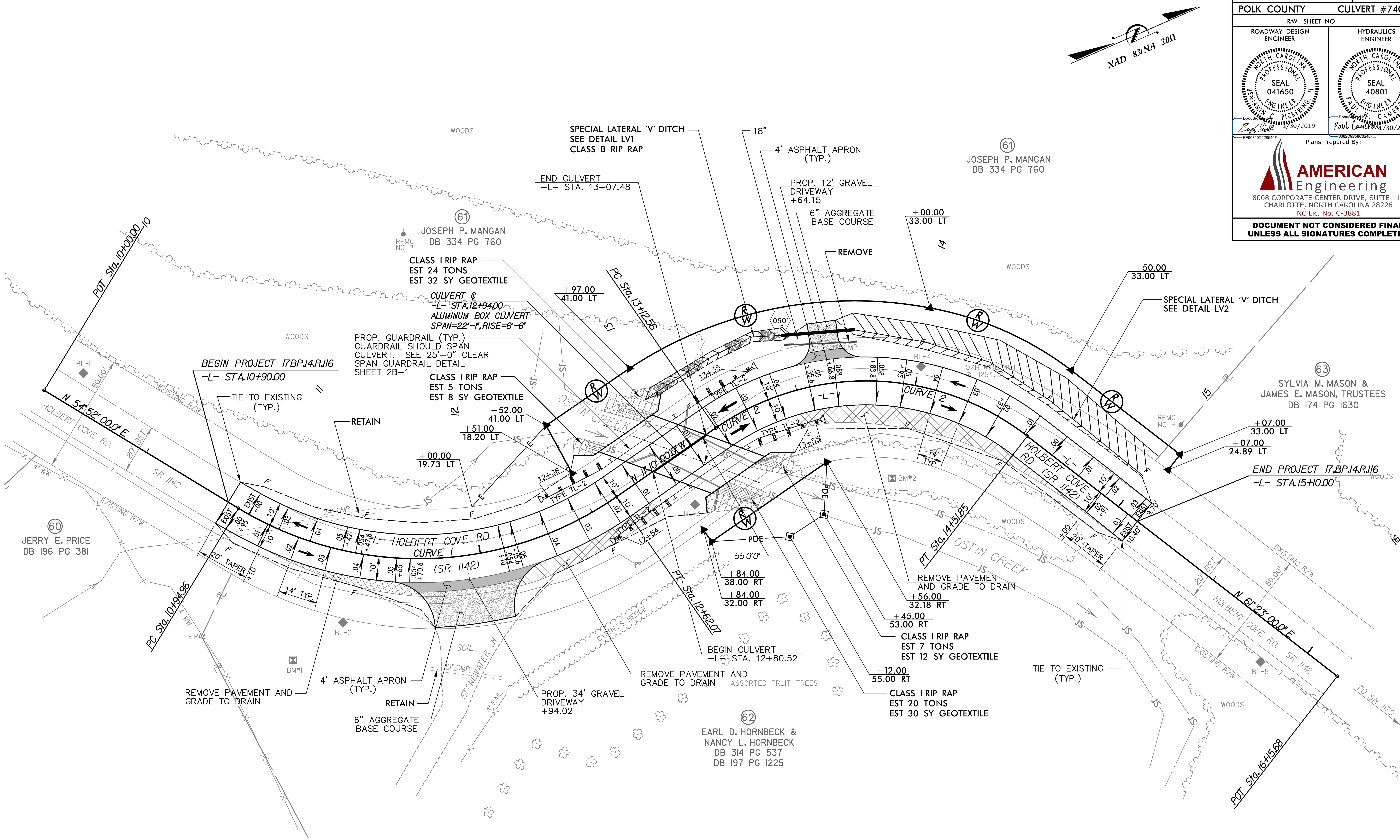
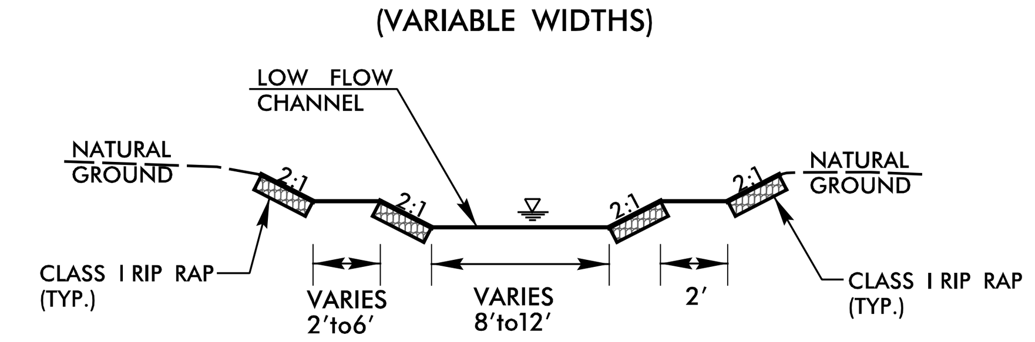
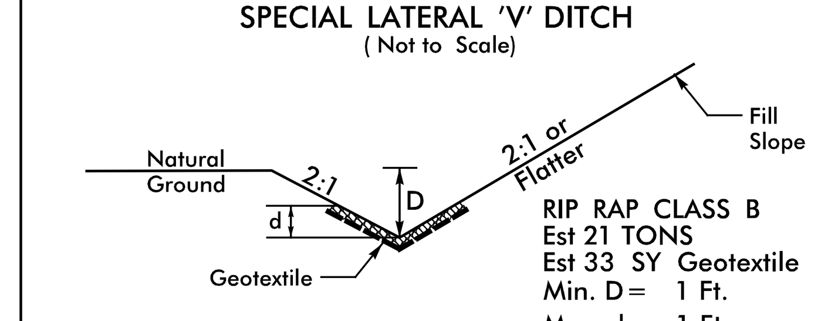

NAD 83/NA 2011
POT Sta. 10+00.00
10
N 54°52′ 00.0″ E
BEGIN PROJECT 17BP.14.R.116
-L- STA.10+90.00
TIE TO EXISTING (TYP.)
RETAIN
WOODS
BL-1
50.00′
EXISTING R/W
HOLBERT COVE RD.
SR 1142
20′ BST
4′ WW
60
JERRY E. PRICE
DB 196 PG 381
PC Sta. 10+94.96
20′ TAPER
14′ TYP.
BL-2
EIP
BM#1
REMOVE PAVEMENT AND GRADE TO DRAIN
4′ ASPHALT APRON (TYP.)
RETAIN
6″ AGGREGATE BASE COURSE
SOIL
15″ CMP
STONEWATER LN
4′ RAIL
CYPRESS HEDGE
PROP. 34′ GRAVEL DRIVEWAY +94.02
-L- HOLBERT COVE RD
CURVE 1
(SR 1142)
24″ CMP
61
JOSEPH P. MANGAN
DB 334 PG 760
REMC NO #
CLASS I RIP RAP
EST 24 TONS
EST 32 SY GEOTEXTILE
CULVERT ℄
-L- STA.12+94.00
ALUMINUM BOX CLUVERT
SPAN=22′-1″, RISE=6′-6″
PROP. GUARDRAIL (TYP.)
GUARDRAIL SHOULD SPAN CULVERT. SEE 25′-0″ CLEAR SPAN GUARDRAIL DETAIL SHEET 2B-1
CLASS I RIP RAP
EST 5 TONS
EST 8 SY GEOTEXTILE
+52.00 41.00 LT
+51.00 18.20 LT
+00.00 19.73 LT
+97.00 41.00 LT
END CULVERT
-L- STA. 13+07.48
PC Sta. 13+12.56
SPECIAL LATERAL ‘V’ DITCH
SEE DETAIL LV1
CLASS B RIP RAP
18″
4′ ASPHALT APRON (TYP.)
PROP. 12′ GRAVEL DRIVEWAY +64.15
6″ AGGREGATE BASE COURSE
REMOVE
+00.00 33.00 LT
0501
12″ CMP
OSTIN CREEK
12+36
TYPE TL-2
13+35
N 11°10′ 00.0″ W
CURVE 2
12+54
13+55
BL-3
BL-4
BM#2
PDE
55°0′0″
+84.00 38.00 RT
+84.00 32.00 RT
PT Sta. 12+62.07
BEGIN CULVERT
-L- STA. 12+80.52
REMOVE PAVEMENT AND GRADE TO DRAIN
ASSORTED FRUIT TREES
62
EARL D. HORNBECK &
NANCY L. HORNBECK
DB 314 PG 537
DB 197 PG 1225
+56.00 32.18 RT
+45.00 53.00 RT
CLASS I RIP RAP
EST 7 TONS
EST 12 SY GEOTEXTILE
+12.00 55.00 RT
CLASS I RIP RAP
EST 20 TONS
EST 30 SY GEOTEXTILE
REMOVE PAVEMENT AND GRADE TO DRAIN
PT Sta. 14+51.85
14
WOODS
+50.00 33.00 LT
SPECIAL LATERAL ‘V’ DITCH
SEE DETAIL LV2
O/H WIRE HGT 1254.13′
HOLBERT COVE RD (SR 1142)
15
63
SYLVIA M. MASON &
JAMES E. MASON, TRUSTEES
DB 174 PG 1630
REMC NO #
+07.00 33.00 LT
+07.00 24.89 LT
END PROJECT 17.BP.14.R.116
-L- STA.15+10.00
9.70′
10.40′
TIE TO EXISTING (TYP.)
16
N 61°23′ 00.0″ E
HOLBERT COVE RD. SR 1142
BL-5
TO SR 1170
POT Sta. 16+15.68

FLOODPLAIN BENCHES DETAIL
AT INLET AND OUTLET
(VARIABLE WIDTHS)

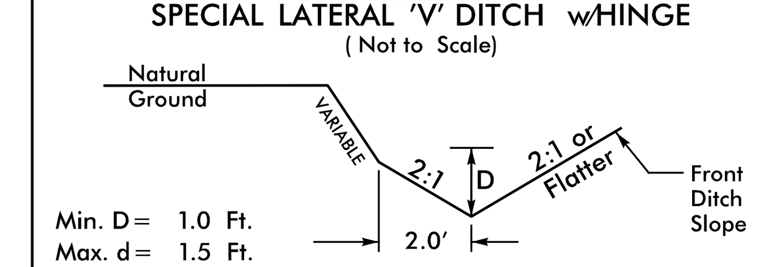


DETAIL LV1
SPECIAL LATERAL ‘V’ DITCH
(Not to Scale)



FROM -L- STA. 12+95 LT TO STA. 13+50 LT

DETAIL LV2
SPECIAL LATERAL ‘V’ DITCH w/HINGE
(Not to Scale)



FROM -L- STA. 13+50 LT TO STA. 15+00 LT

PAVEMENT REMOVAL
FOR PROFILE SEE PLAN SHEET 5
FOR CULVERT SEE SHEETS C-1 THRU C-5

-L- CURVE 1 DATA
PI Sta 11+89.18
Δ = 66° 02′ 00.0″ (LT)
D = 39° 30′ 51.6″
L = 167.11′
T = 94.22′
R = 145.00′
DS = 20 MPH
SE = 0.054

-L- CURVE 2 DATA
PI Sta 13+93.29
Δ = 72° 33′ 00.0″ (RT)
D = 52° 05′ 13.5″
L = 139.29′
T = 80.73′
R = 110.00′
DS = 20 MPH
SE = 0.058

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	5
POLK COUNTY	CULVERT #740125
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041650 ENGINEER BENJAMIN C. PICKERING

DocuSigned by: Benjamin Pickering 8/30/2019

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 40801 ENGINEER PAUL C. CAMERON

DocuSigned by: Paul Cameron 8/30/2019

EE60310D28540F

Plans Prepared By:

AMERICAN Engineering
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
NC Lic. No. C-3881

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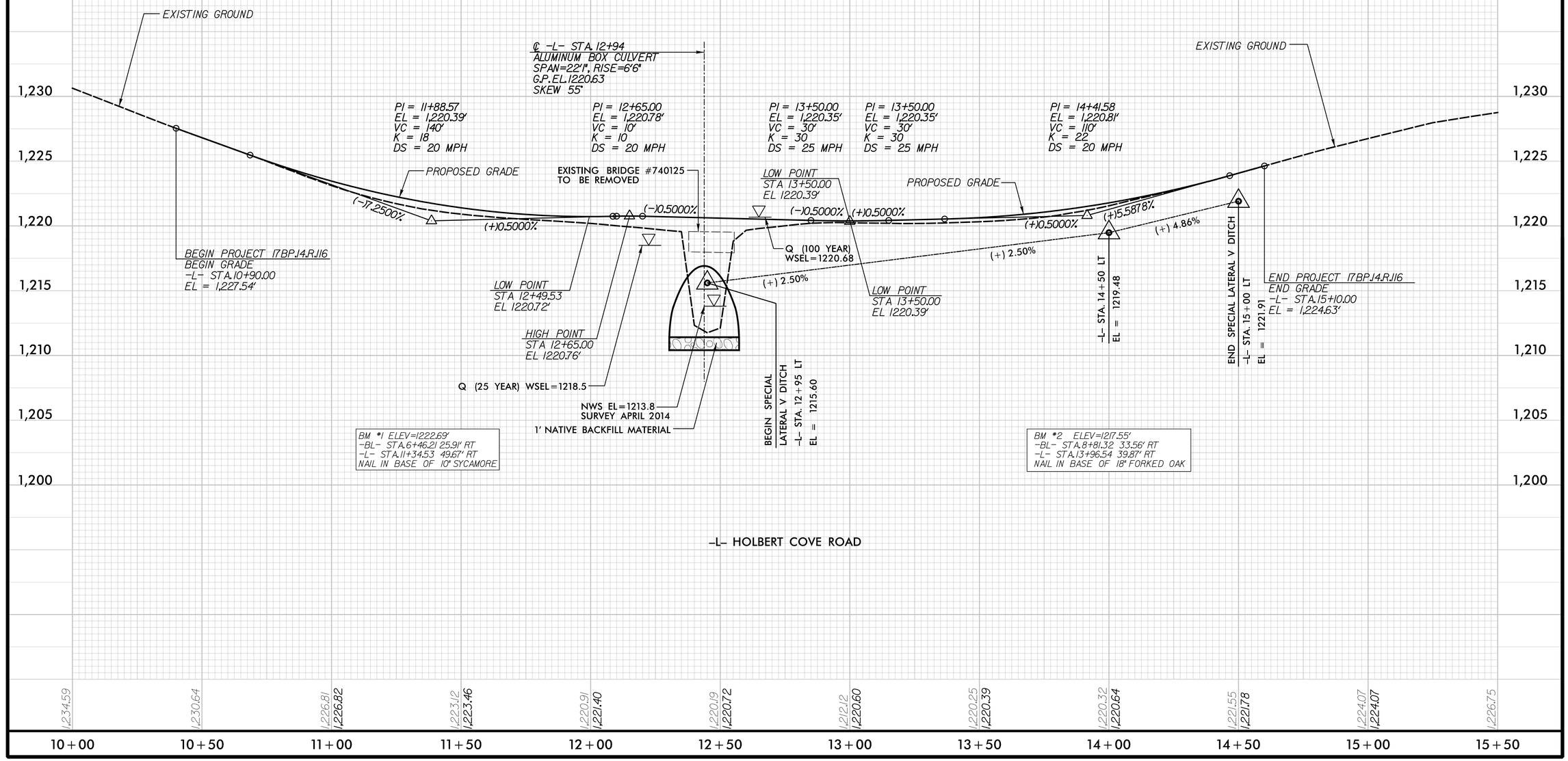
CULVERT HYDRAULIC DATA

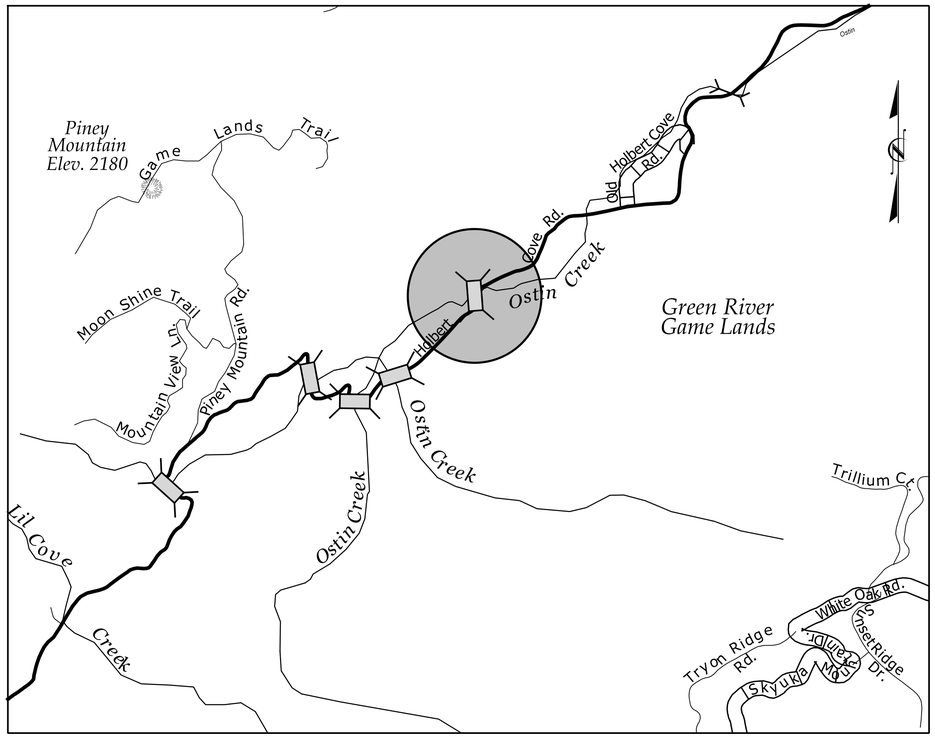
DESIGN DISCHARGE	= 600 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 1218.5 FT
BASE DISCHARGE	= 850 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 1220.68 FT
OVERTOPPING DISCHARGE	= 850 CFS
OVERTOPPING FREQUENCY	= +100 YRS
OVERTOPPING ELEVATION	= 1220.7 FT



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

POLK COUNTY



VICINITY MAP
NTS

LOCATION: BRIDGE #740125 OVER OSTIN CREEK ON SR 1142 (HOLBERT COVE RD.)

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

JOSEPH E. HUMMER, P.E. — *STATE TRAFFIC MANAGEMENT ENGINEER*
ALLISON C. JOHNSON, P.E. — *TRAFFIC CONTROL PROJECT ENGINEER*
BENJAMIN C. PICKERING II, P.E. — *TRAFFIC CONTROL PROJECT DESIGN ENGINEER*
_____ — *TRAFFIC CONTROL DESIGN ENGINEER*

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

INDEX OF SHEETS

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Plans Prepared By:

AMERICAN Engineering
AMERICAN ENGINEERING ASSOCIATES - SOUTHEAST, PA
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CHARLOTTE, NC 28226
704-375-2438 NC Lic. No. C-3881

APPROVED: DocuSigned by: A. Chris Johnson 1/30/2019
DATE: 1/30/2019

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER ALLISON C. JOHNSON

SHEET NO.
TMP-1

PROJECT: 17BP.14.R.116

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	TMP-1A
POLK COUNTY	CULVERT #740125

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ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES TYPE III
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION - REFLECTIVE END TREATMENT
1165.01	TRUCK MOUNTED ATTENUATOR - DELINEATION
1170.01	POSITIVE PROTECTION - PORTABLE CONCRETE BARRIER
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - DIVIDED AND UNDIVIDED ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. EDGE OF PAVEMENT
- NORTH ARROW
- PROPOSED PAVEMENT
- WORK AREA
- CONSTRUCT UNDER TRAFFIC
- TEMPORARY PAVEMENT

SIGNALS

EXISTING PROPOSED TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE I)
- BARRICADE (TYPE II)
- BARRICADE (TYPE III)
- PORTABLE CONCRETE BARRIER
- CONE / TUBULAR MARKER
- DRUM / SKINNY DRUM
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- WARNING FLAGS
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

APPROVED: DocuSigned by: C. Chris Johnson DATE: 1/30/2019

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER CHRISTON C JOHNSON

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	TMP-1B
POLK COUNTY	CULVERT #740125

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

MAINTAIN DRIVEWAY ACCESS TO PROPERTY OWNERS AT ALL TIMES.

PROJECT SEQUENCE (17BP.14.R.116 AND 17BP.14.R.117)

A) AT NO TIME SHALL BOTH PROJECTS HAVE LANE CLOSURES OR ROAD CLOSURES CONCURRENTLY, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

B) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

C) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

D) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

LANE AND SHOULDER CLOSURE REQUIREMENTS

E) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

H) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

I) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

TRAFFIC BARRIER

J) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE, WITHOUT APPROVAL BY THE ENGINEER.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC. INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

K) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 1101.05)

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT

TRAFFIC CONTROL DEVICES

L) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT,10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

PAVEMENT MARKINGS AND MARKERS

M) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

N) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

LOCAL NOTES

1) TEMPORARY TRAFFIC SIGNALS SHOWN ARE ASSUMED TO BE PORTABLE TEMPORARY TRAFFIC SIGNALS SUPPLIED BY THE CONTRACTOR. PORTABLE TEMPORARY TRAFFIC SIGNALS ARE TO BE SET A MINIMUM OF 2 FEET OUTSIDE OF THE LANE BEING CONTROLLED. THE BOTTOM OF THE SIGNAL HEAD HOUSING SHALL BE A MINIMUM OF 7 FEET ABOVE THE PAVEMENT.

2) THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING A MINIMUM OF ONE (1) MONTH BEFORE THE TEMPORARY TRAFFIC SIGNAL INSTALLATION IS REQUIRED AND 15 DAYS PRIOR TO THE INSTALLATION OF A LANE CLOSURE.

3) PLACE REFLECTIVE DELINEATORS ON TOP OF PORTABLE CONCRETE BARRIER PER NCDOT STD 1170.01 SHEET 5 OF 5 - SPACED AT 25 FOOT INCREMENTS PER NCDOT STD 1261.01.

4) CONTRACTOR SHALL ASSURE THAT THE ANCHORING OF THE PORTABLE CONCRETE BARRIER AND ASSOCIATED CRASH CUSHIONS DOES NOT INTERFERE WITH EXISTING OR PROPOSED UTILITIES.

5) BARRIER SHALL BE ANCHORED WHERE DROPOFFS EXCEED ALLOWABLE DISTANCE, WHERE BARRIER DEFLECTION DOES NOT MEET MINIMUM REQUIREMENTS, OR AS DIRECTED BY THE ENGINEER.

6) ACCESS TO HOLBERT COVE ROAD SHALL BE MAINTAINED FOR FIRE & EMERGENCY SERVICES.

7) THE CONTRACTOR SHALL PROVIDE ONE MONTH NOTICE TO ENGINEER, COUNTY EMS, AND COUNTY SCHOOL OFFICIALS PRIOR TO ROAD CLOSURES.

PHASING NOTES

STAGE 1

1. THE CONTRACTOR SHALL PLACE ALL CONSTRUCTION WARNING ("ROAD WORK AHEAD" W20-1, "END ROAD WORK" G20-2A) SIGNS THROUGHOUT THE PROJECT WITHIN THE TIME FRAME REQUIRED IN THE GENERAL NOTES PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES, INCLUDING EROSION AND SEDIMENT CONTROL, AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED.

2. INSTALL EROSION CONTROL DEVICES THROUGHOUT THE PROJECT IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLANS, CLEARING ONLY THE AREA NECESSARY TO INSTALL THE DEVICES.

3. USING APPLICABLE SHEETS FROM NCDOT STD. 1101.02 CONSTRUCT TEMPORARY PAVEMENT FOR STAGE 2 - PHASE 1.

STAGE 2
PHASE 1

1. CONTRACTOR SHALL PLACE ALL WORK ZONE RELATED SIGNS, BARRIERS/ANCHORED BARRICADES,DRUMS, AND TEMPORARY PAVEMENT NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF THIS PHASE AS DEPICTED ON SHEET TMP-3. INSTALL TEMPORARY SIGNALIZATION TO MAINTAIN A SINGLE LANE OF TRAFFIC FOR BOTH DIRECTIONS OF TRAFFIC WITH ALTERNATING OPERATION ON THE EAST SIDE OF THE EXISTING BRIDGE #740125. USE APPLICABLE SHEETS FROM NCDOT STD 1101.02. REMOVE ANY CONFLICTING SIGNS BEFORE SHIFTING TRAFFIC TO A NEW PATTERN.

2. INSTALL SLOPE PROTECTION OR TEMPORARY SHORING AS REQUIRED.

3. CONSTRUCT ANY DRAINAGE FEATURES NECESSARY TO MAINTAIN POSITIVE FLOW DURING CONSTRUCTION.

4. CONSTRUCT THE WEST SIDE OF THE PROPOSED CULVERT AND PROPOSED ROADWAY TO THE GREATEST EXTENT POSSIBLE. USE SLOPE PROTECTION OR TEMPORARY SHORING AS NECESSARY BETWEEN THE EXISTING ROAD & PROPOSED CONSTRUCTION.

5. CONSTRUCT PROPOSED AND TEMPORARY PAVEMENT REQUIRED FOR STAGE 2 - PHASE 2.

STAGE 2
PHASE 2 - STEP 1

1. CONTRACTOR SHALL PLACE ALL WORK ZONE RELATED SIGNS, BARRIERS/ANCHORED BARRICADES, DRUMS, AND TEMPORARY PAVEMENT NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF THIS PHASE AS DEPICTED ON SHEET TMP-4. ADJUST TEMPORARY SIGNALIZATION TO MAINTAIN A SINGLE LANE OF TRAFFIC ON THE WEST SIDE OF THE NEWLY CONSTRUCTED CULVERT FOR BOTH DIRECTIONS OF TRAFFIC WITH ALTERNATING OPERATION. USE APPLICABLE SHEETS FROM NCDOT STD 1101.02. REMOVE ANY CONFLICTING SIGNS BEFORE SHIFTING TRAFFIC TO A NEW PATTERN.

2. CONSTRUCT ANY DRAINAGE FEATURES NECESSARY TO MAINTAIN POSITIVE FLOW DURING CONSTRUCTION.

3. CONSTRUCT THE EAST SIDE OF THE PROPOSED CULVERT, PROPOSED DRAINAGE FEATURES, PROPOSED GRADING AND PROPOSED ROADWAY TO THE GREATEST EXTENT POSSIBLE. USE SLOPE PROTECTION OR TEMPORARY SHORING AS NECESSARY BETWEEN THE EXISTING ROAD & PROPOSED CONSTRUCTION.

4. REMOVE EXISTING PAVEMENT BEYOND PROPOSED EDGE OF PAVEMENT AND GRADE TO DRAIN.

5. OPEN ROADWAY TO TWO-LANE, TWO-WAY TRAFFIC OPERATION, UTILIZING TEMPORARY DRUMS AS REQUIRED.

STAGE 2
PHASE 2 - STEP 2

1. CONSTRUCT ANY REMAINING PROPOSED PAVEMENT NOT COMPLETED IN PHASE 1 OR PHASE 2 USING FLAGGING OPERATIONS AS NECESSARY, MAINTAINING ONE LANE OF TRAFFIC IN EACH DIRECTION USING APPLICABLE SHEETS FROM NCDOT STD 1101.02.

2. REMOVE ANY REMAINING TEMPORARY PAVEMENT.

3. CONSTRUCT REMAINING PROPOSED DRAINAGE AND PROPOSED GRADING.

STAGE 3

1. CONTRACTOR SHALL PLACE ALL WORK ZONE RELATED SIGNS, BARRICADES AND DRUMS NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF THIS PHASE. MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION USING APPLICABLE SHEETS FROM NCDOT STD 1101.02.

2. SEED AND MULCH ALL AREAS DISTURBED AS A RESULT OF THIS CONSTRUCTION.

3. REMOVE ALL EQUIPMENT, TEMPORARY TRAFFIC CONTROL MEASURES, TEMPORARY STOP BAR, AND ROAD WORK SIGNAGE AND OPEN THE PROJECT TO ALL TRAFFIC.

APPROVED: DocuSigned by: A. Chris Peck DATE: 1/30/2019

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER KELLON C. JOHNSON

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN

8/17/99

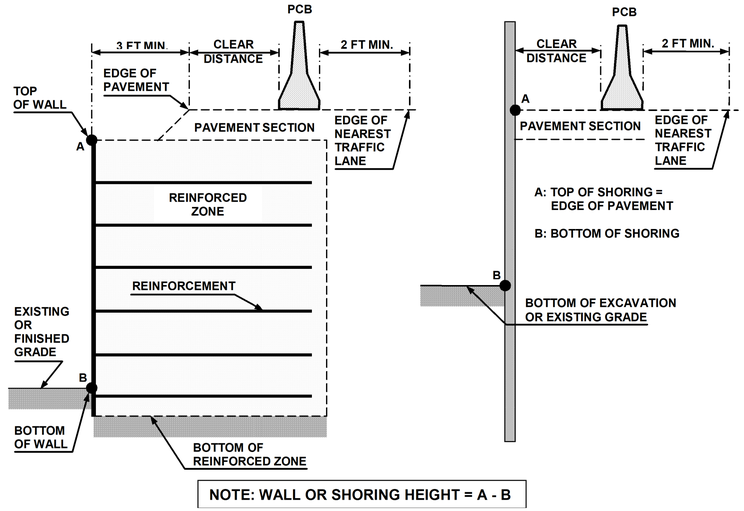

FIGURE A

NOTES

1- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.

2- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).

3- PCB IS REQUIRED IF TEMPORARY SHORING IS LOCATED WITHIN THE CLEAR ZONE IN ACCORDANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).

4- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.

5- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.

6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.

7- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.

8- SET PCB WITH A MINIMUM HORIZONTAL DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A UNLESS OTHERWISE SHOWN IN THE PLANS AND OR AS APPROVED BY THE ENGINEER.

9- FOR PCB ABOVE AND BEHIND TEMPORARY WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THESE MINIMUM REQUIRED DISTANCES ARE NOT AVAILABLE, CONTACT THE ENGINEER.

10- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS. BARRIER DEFLECTIONS AND RESULTING MINIMUM REQUIRED CLEAR DISTANCES MIGHT VARY SIGNIFICANTLY FOR LARGER HEAVIER VEHICLES, RUNS OF BARRIER LESS THAN 200 FT IN LENGTH AND WET OR DRY PAVEMENT.

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	TMP-2
POLK COUNTY	CULVERT #740125

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MINIMUM REQUIRED CLEAR DISTANCE, inches

Barrier Type	Pavement Type	Offset * ft	Design Speed, mph					
			<30	31-40	41-50	51-60	61-70	71-80
Unanchored PCB	Asphalt	<8	24	26	29	32	36	40
		8-14	26	28	31	35	38	42
		14-20	27	29	34	36	39	43
		20-26	28	31	35	38	40	44
		26-32	29	32	36	39	42	45
		32-38	30	34	38	41	43	46
		38-44	31	34	41	43	45	48
		44-50	31	35	41	43	46	49
		50-56	32	36	42	44	47	50
		>56	32	36	42	45	47	51
	Concrete	<8	17	18	21	22	25	26
		8-14	19	20	23	25	26	29
		14-20	22	22	24	26	28	31
		20-26	23	24	26	27	30	34
		26-32	24	25	27	28	32	35
		32-38	24	26	27	30	33	36
		38-44	25	26	28	30	34	37
		44-50	26	26	28	32	35	37
		50-56	26	26	28	32	35	38
		>56	26	27	29	32	36	38
Anchored PCB	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

* See Figure Below

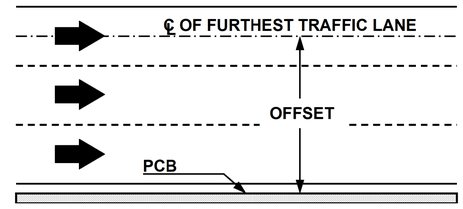

FIGURE B

APPROVED: DocuSigned by: C. Chris Johnson DATE: 1/30/2019

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER HILTON C JOHNSON

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	TMP–3
POLK COUNTY	CULVERT #740125

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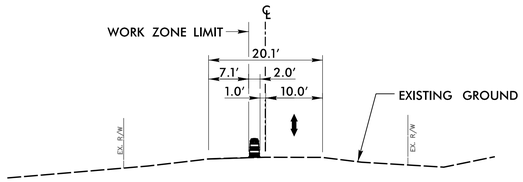
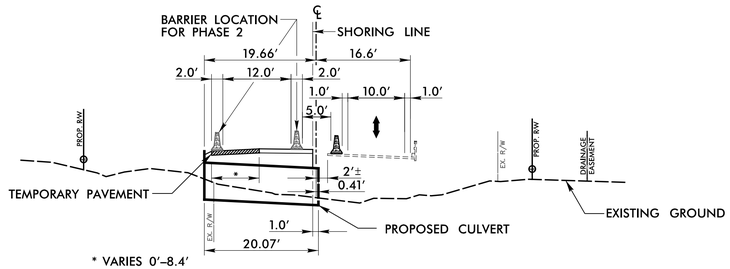
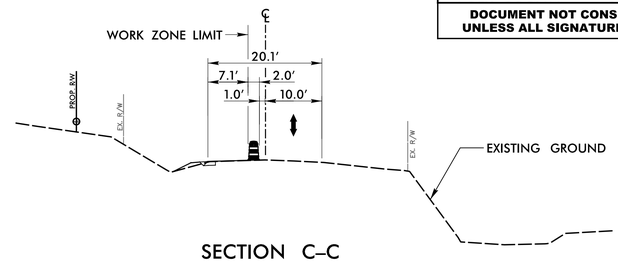


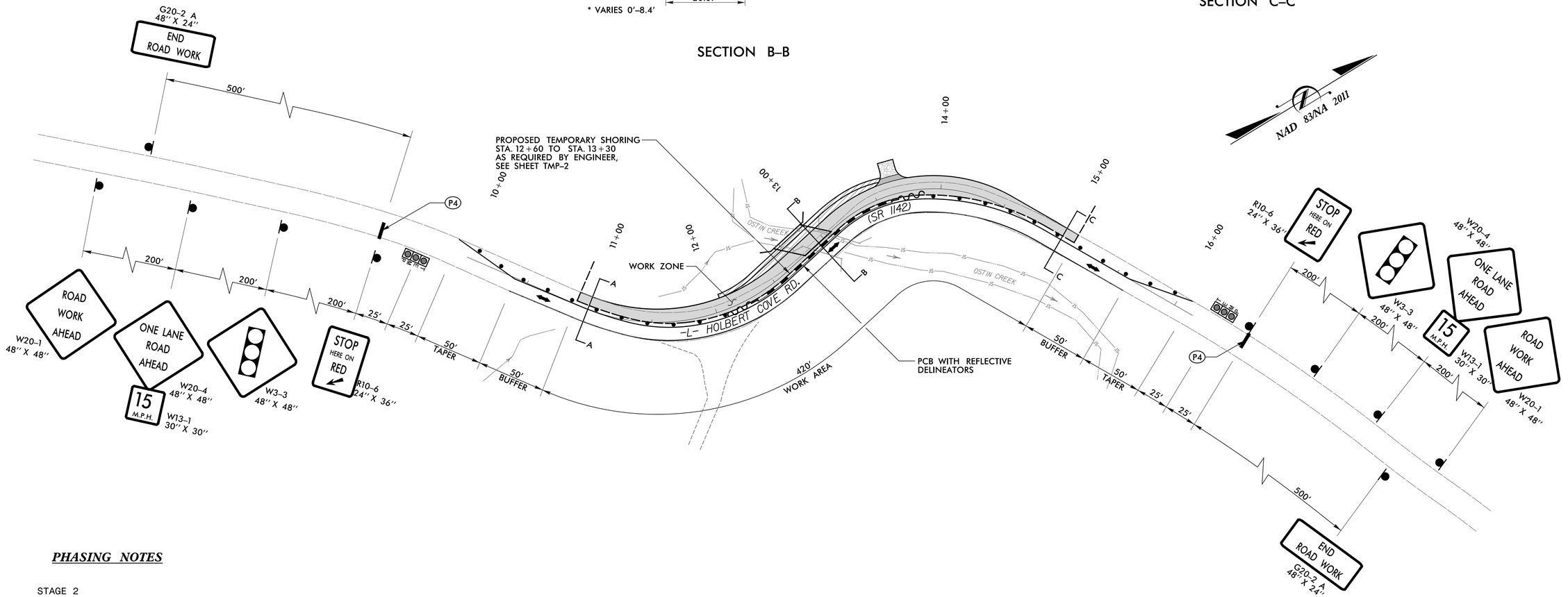
SECTION A–A



SECTION B–B



SECTION C–C



PHASING NOTES

STAGE 2
PHASE 1

1. CONTRACTOR SHALL PLACE ALL WORK ZONE RELATED SIGNS, BARRIERS/ANCHORED BARRICADES,DRUMS, AND TEMPORARY PAVEMENT NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF THIS PHASE AS DEPICTED ON SHEET TMP-3. INSTALL TEMPORARY SIGNALIZATION TO MAINTAIN A SINGLE LANE OF TRAFFIC FOR BOTH DIRECTIONS OF TRAFFIC WITH ALTERNATING OPERATION ON THE EAST SIDE OF THE EXISTING BRIDGE #740125. USE APPLICABLE SHEETS FROM NCDOT STD 1101.02. REMOVE ANY CONFLICTING SIGNS BEFORE SHIFTING TRAFFIC TO A NEW PATTERN.

2. INSTALL SLOPE PROTECTION OR TEMPORARY SHORING AS REQUIRED.

3. CONSTRUCT ANY DRAINAGE FEATURES NECESSARY TO MAINTAIN POSITIVE FLOW DURING CONSTRUCTION.

4. CONSTRUCT THE WEST SIDE OF THE PROPOSED CULVERT AND PROPOSED ROADWAY TO THE GREATEST EXTENT POSSIBLE. USE SLOPE PROTECTION OR TEMPORARY SHORING AS NECESSARY BETWEEN THE EXISTING ROAD & PROPOSED CONSTRUCTION.

5. CONSTRUCT PROPOSED AND TEMPORARY PAVEMENT REQUIRED FOR STAGE 2 - PHASE 2.

TEMPORARY PAVEMENT MARKING SCHEDULE

SYMBOL	WIDTH	COLOR	MATERIAL	DESCRIPTION
P4	24″	WHITE	PAINT	TEMPORARY STOP BAR

40 20 0 40 80
Scale 1″ = 40′

APPROVED DocuSigned by: C. Chris Johnson DATE: 1/30/2019

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER ALLISON C JOHNSON

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

TRAFFIC MANAGEMENT PLAN

PHASE 1

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	TMP–4
POLK COUNTY	CULVERT #740125

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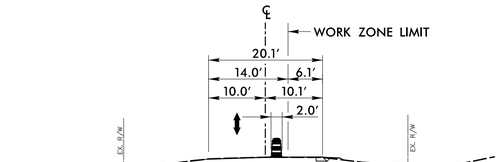
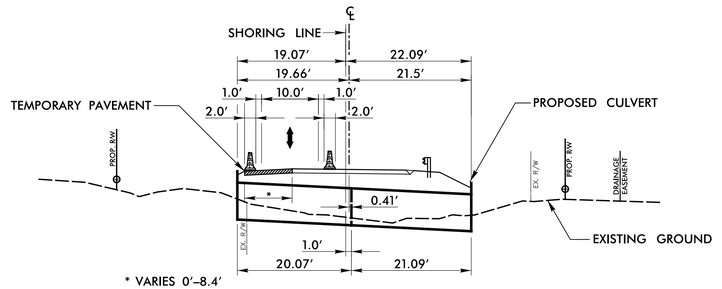
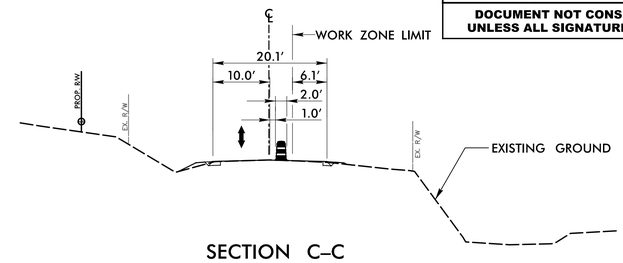


SECTION A–A



* VARIES 0′–8.4′

SECTION B–B



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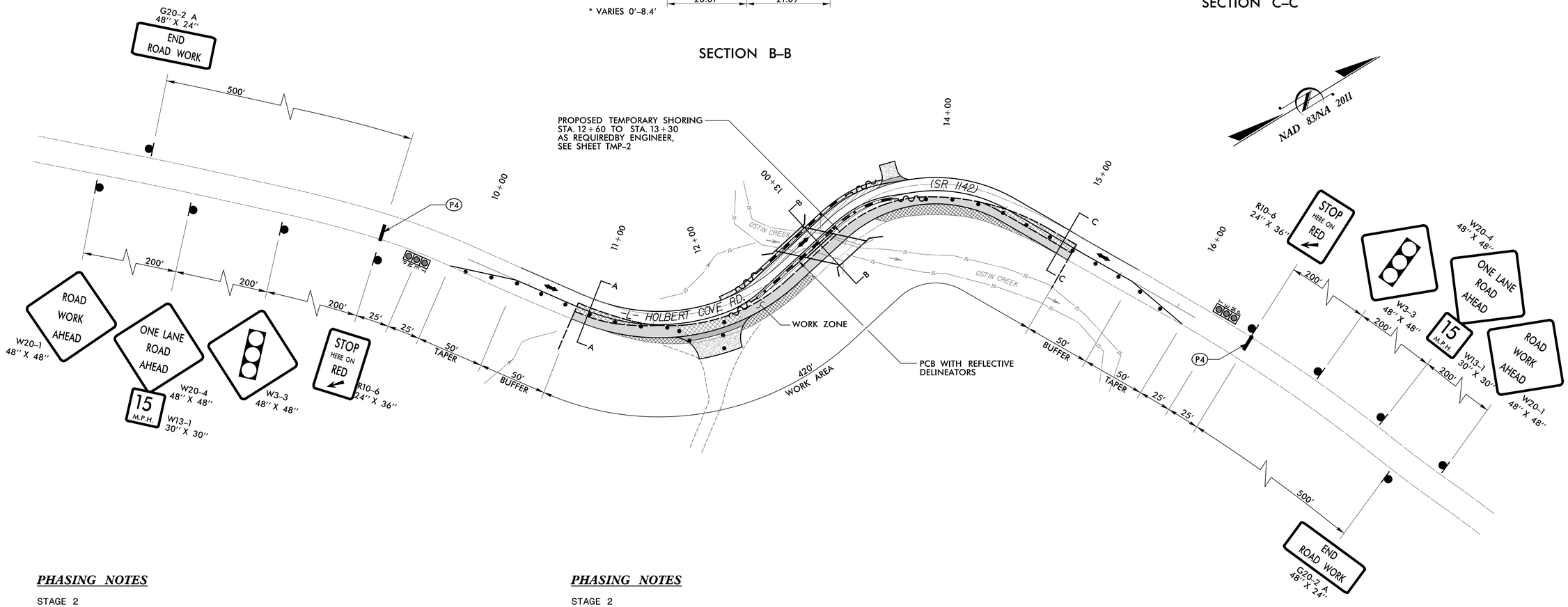

PHASING NOTES

STAGE 2
PHASE 2 - STEP 1

1. CONTRACTOR SHALL PLACE ALL WORK ZONE RELATED SIGNS, BARRIERS/ANCHORED BARRICADES, DRUMS, AND TEMPORARY PAVEMENT NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF THIS PHASE AS DEPICTED ON SHEET TMP-4. ADJUST TEMPORARY SIGNALIZATION TO MAINTAIN A SINGLE LANE OF TRAFFIC ON THE WEST SIDE OF THE NEWLY CONSTRUCTED CULVERT FOR BOTH DIRECTIONS OF TRAFFIC WITH ALTERNATING OPERATION. USE APPLICABLE SHEETS FROM NCDOT STD 1101.02. REMOVE ANY CONFLICTING SIGNS BEFORE SHIFTING TRAFFIC TO A NEW PATTERN.
2. CONSTRUCT ANY DRAINAGE FEATURES NECESSARY TO MAINTAIN POSITIVE FLOW DURING CONSTRUCTION.
3. CONSTRUCT THE EAST SIDE OF THE PROPOSED CULVERT, PROPOSED DRAINAGE FEATURES, PROPOSED GRADING AND PROPOSED ROADWAY TO THE GREATEST EXTENT POSSIBLE. USE SLOPE PROTECTION OR TEMPORARY SHORING AS NECESSARY BETWEEN THE EXISTING ROAD & PROPOSED CONSTRUCTION.
4. REMOVE EXISTING PAVEMENT BEYOND PROPOSED EDGE OF PAVEMENT AND GRADE TO DRAIN.
5. OPEN ROADWAY TO TWO-LANE, TWO-WAY TRAFFIC OPERATION, UTILIZING TEMPORARY DRUMS AS REQUIRED.

PHASING NOTES

STAGE 2
PHASE 2 - STEP 2

1. CONSTRUCT ANY REMAINING PROPOSED PAVEMENT NOT COMPLETED IN PHASE 1 OR PHASE 2 USING FLAGGING OPERATIONS AS NECESSARY, MAINTAINING ONE LANE OF TRAFFIC IN EACH DIRECTION USING APPLICABLE SHEETS FROM NCDOT STD 1101.02.
2. REMOVE ANY REMAINING TEMPORARY PAVEMENT.
3. CONSTRUCT REMAINING PROPOSED DRAINAGE AND PROPOSED GRADING.

TEMPORARY PAVEMENT MARKING SCHEDULE

SYMBOL	WIDTH	COLOR	MATERIAL	DESCRIPTION
P4	24″	WHITE	PAINT	TEMPORARY STOP BAR

40 20 0 40 80
Scale 1″ = 40′

APPROVED DocuSigned by: C. Chris Johnson DATE: 1/30/2019

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER ALLISON C JOHNSON

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

TRAFFIC MANAGEMENT PLAN

PHASE 2

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	PMP-1

APPROVED: DocuSigned by: A. Chris Johnson —FEBEA54AFC014A5... DATE: 1/30/2019

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER ALLISON C. JOHNSON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PAVEMENT MARKING PLANS

POLK COUNTY

LOCATION: BRIDGE #740125 OVER OSTIN CREEK ON SR 1142 (HOLBERT COVE ROAD)

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - DIVIDED AND UNDIVIDED ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINATION

PAVEMENT MARKING SCHEDULE

ASPHALT PAVEMENT DESIGN
(AS SHOWN)

PAVEMENT MARKING LINES

PA – PAINT – WHITE EDGE LINE (4")
PI – PAINT – YELLOW DOUBLE CENTER LINE (4")

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE AS FOLLOWS:

ASPHALT PAVEMENT DESIGN:

ROAD NAME	MARKING	MARKER
SR 1142	PAINT	N/A

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS.

D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

INDEX OF SHEETS

Plans Prepared By:

AMERICAN Engineering

AMERICAN ENGINEERING ASSOCIATES - SOUTHEAST, PA
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CHARLOTTE, NC 28226
704-375-2438 NC Lic. No. C-3881

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	PMP-2
POLK COUNTY	CULVERT #740125
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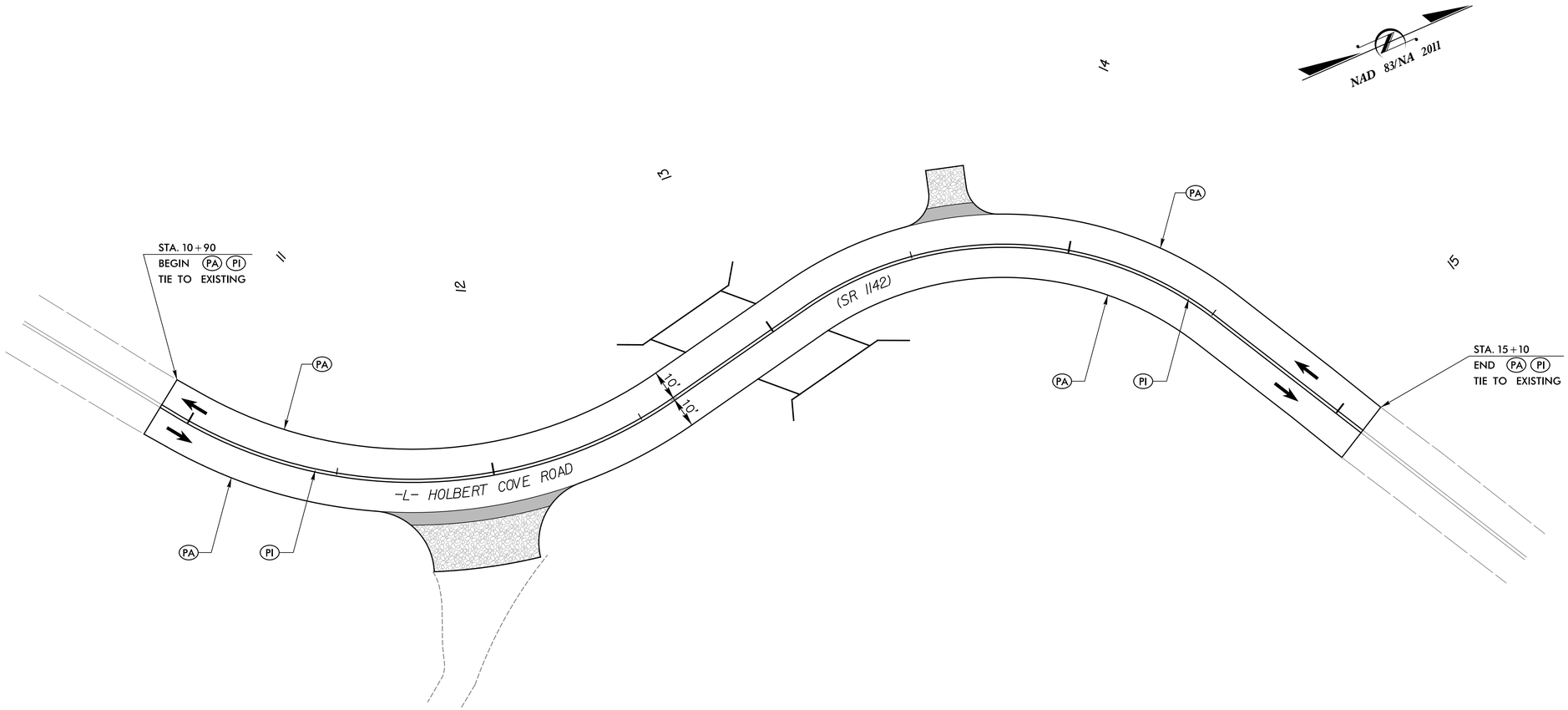


Scale 1" = 20'

PERMANENT PAVEMENT MARKING SCHEDULE

SYMBOL	WIDTH	COLOR	MATERIAL	DESCRIPTION
PA	4"	WHITE	PAINT	EDGE LINE
PI	4"	YELLOW	PAINT	DOUBLE CENTER

APPROVED: A. Chris Johnson DATE: 1/30/2019

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER ALLISON C JOHNSON

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

PAVEMENT MARKING PLAN

09/08/99

PROJECT: 17BP.14.R.116

CONTRACT: DN00283

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

POLK COUNTY

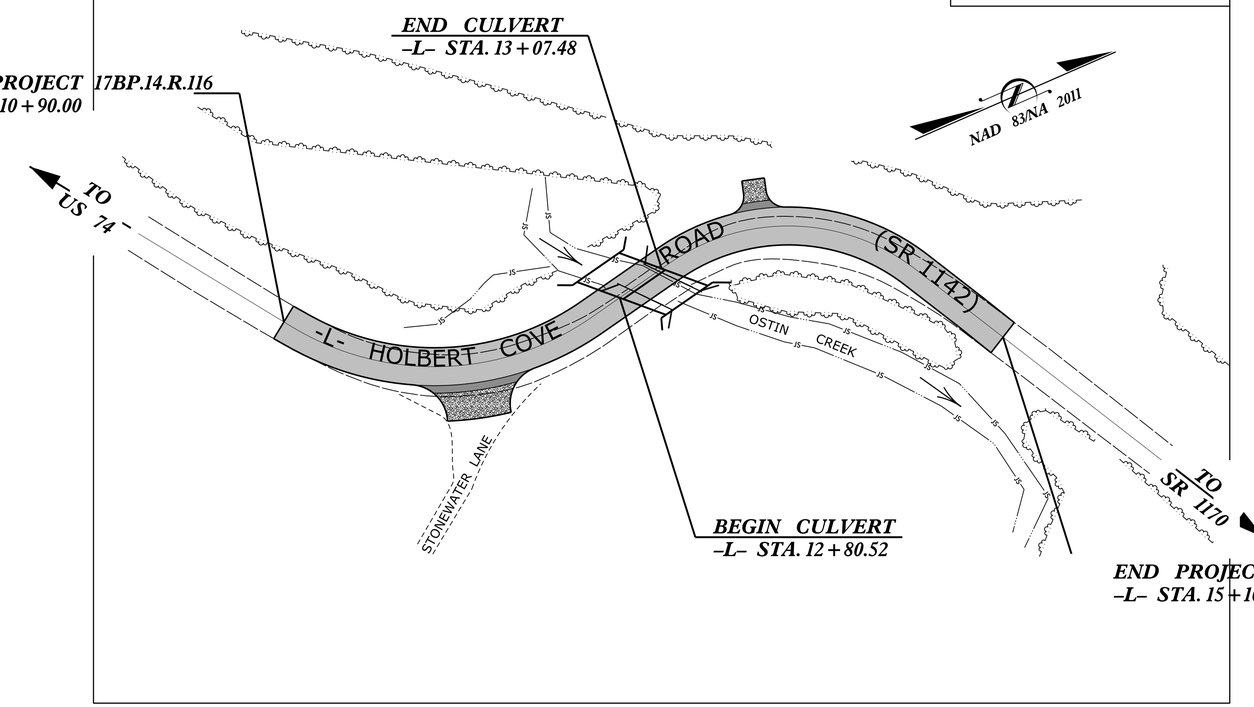
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.116	EC-1	
POLK COUNTY		CULVERT #740125	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.14.R.116		PE
17BP.14.R.116		R/W
17BP.14.R.116		CONST

LOCATION: BRIDGE #740125 OVER OSTIN CREEK ON SR 1142 (HOLBERT COVE ROAD)

TYPE OF WORK: PAVING, GRADING, DRAINAGE & CULVERT

EC–4



ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

NCDOT CONTACT:
HIGHWAY DIVISION 14 BRIDGE MANAGER
ADAM DOCKERY, P.E.
(828) 488–0902

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

GRAPHIC SCALES

20 10 0 20 40
PLANS

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG–010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2018 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Plans Prepared By:
M A Engineering Consultants, Inc.
598 East Chatham Street - Suite 137
Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 29, 2015

LETTING DATE:
MARCH 12, 2019

PAUL CAMERON, PE
PROJECT ENGINEER
LEVEL III CERTIFICATION
NUMBER 3624

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2018 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Cheek Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Cheek Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

2/14/2019
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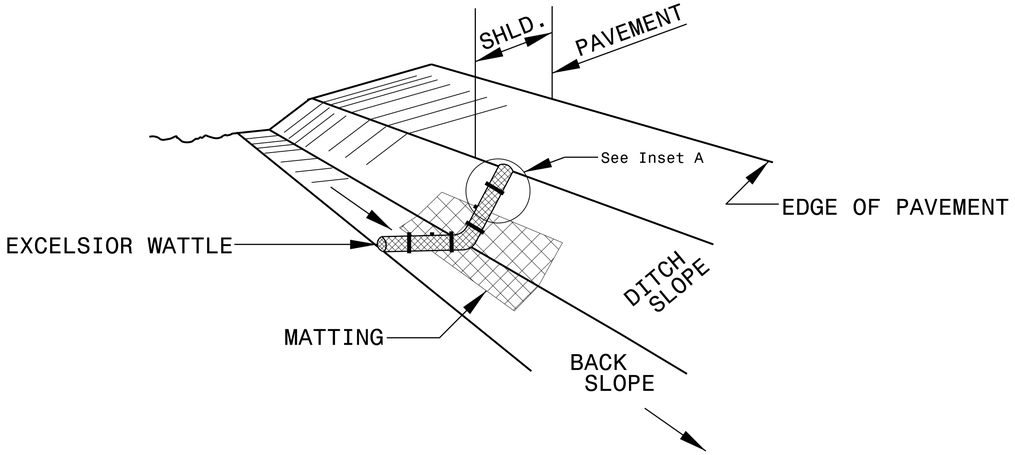
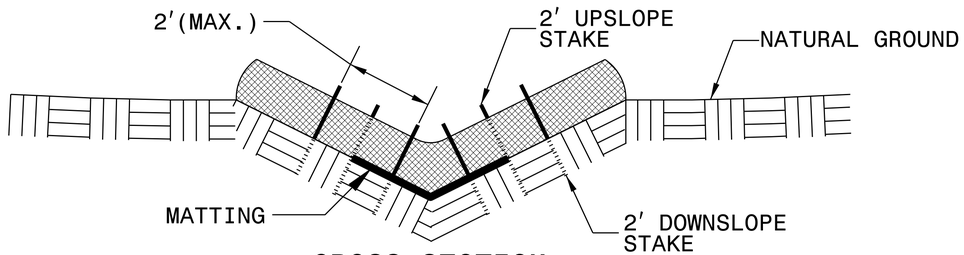
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	EC-2
POLK COUNTY	CULVERT #740125

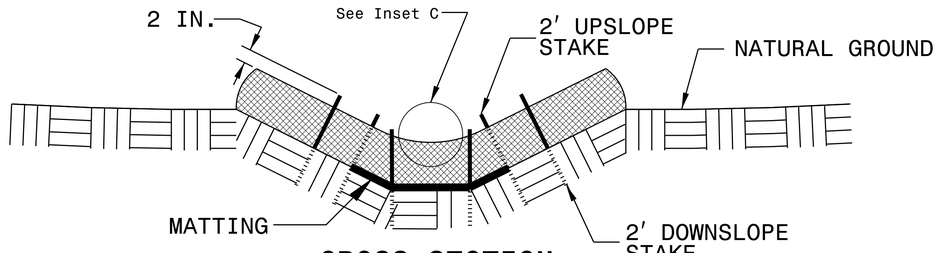
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

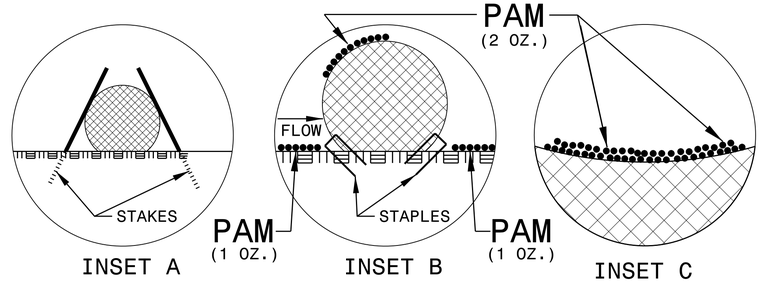
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

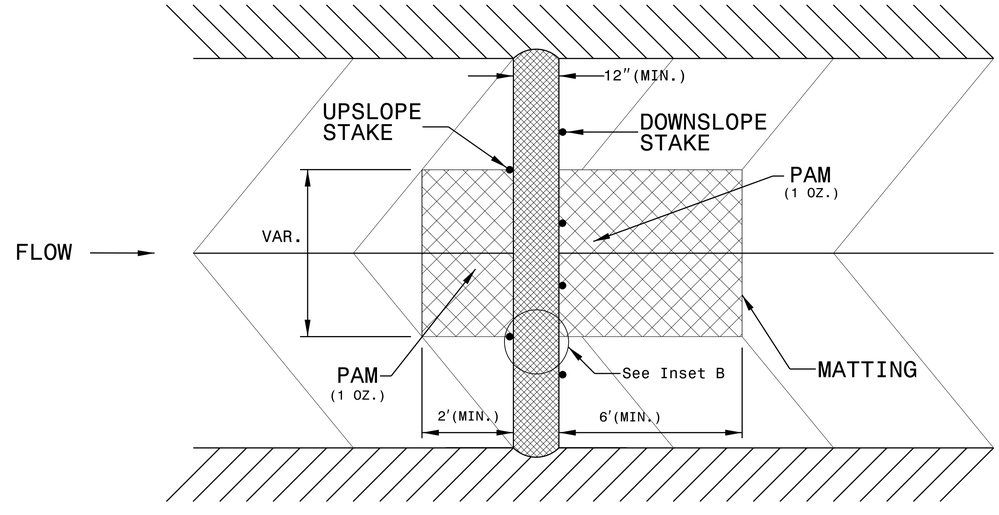
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

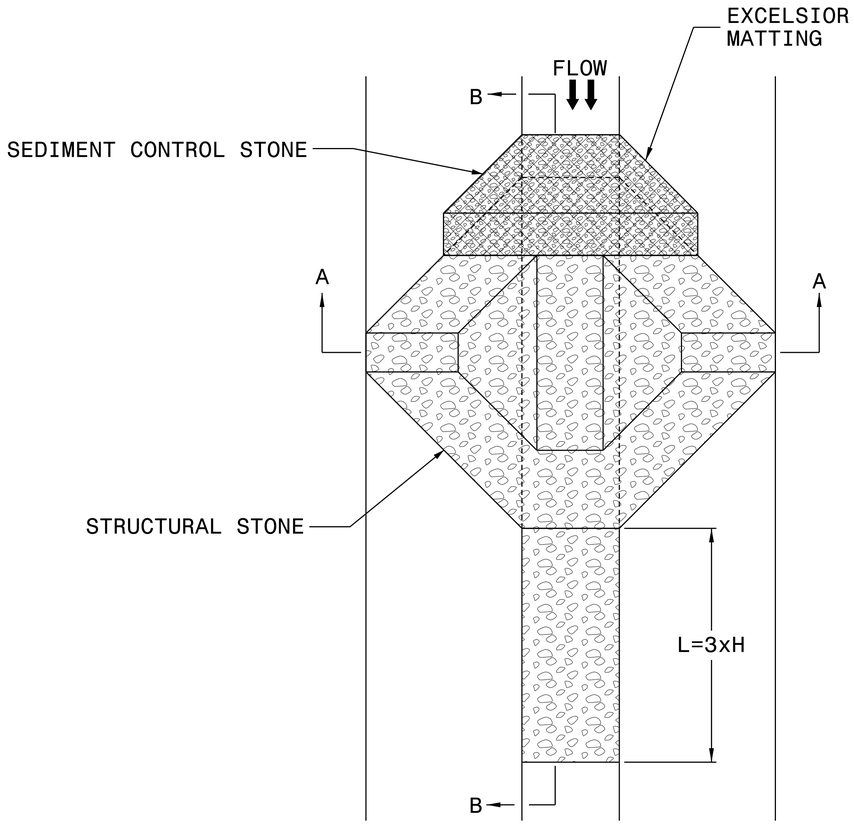




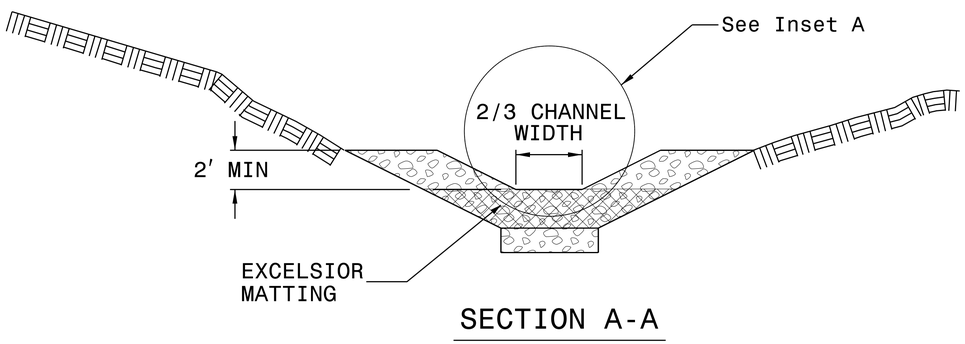
TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	EC-2A
POLK COUNTY	CULVERT #740125

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN



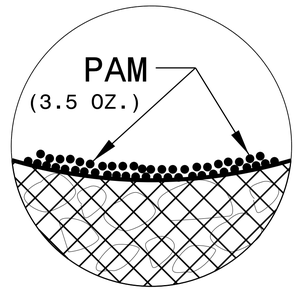
SECTION A-A

NOTES

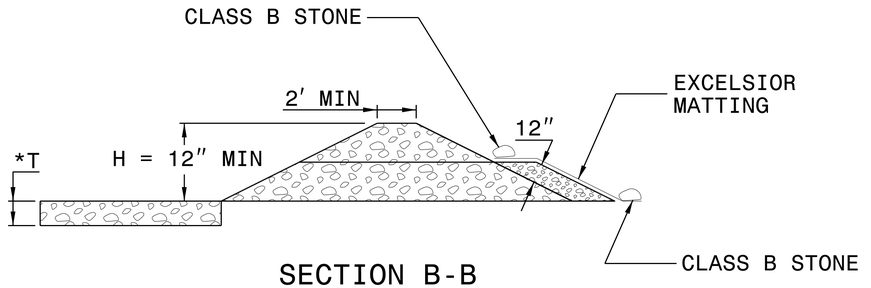
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 3.5 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION B-B

*T = 12" MIN., 18" MAX.

NOT TO SCALE

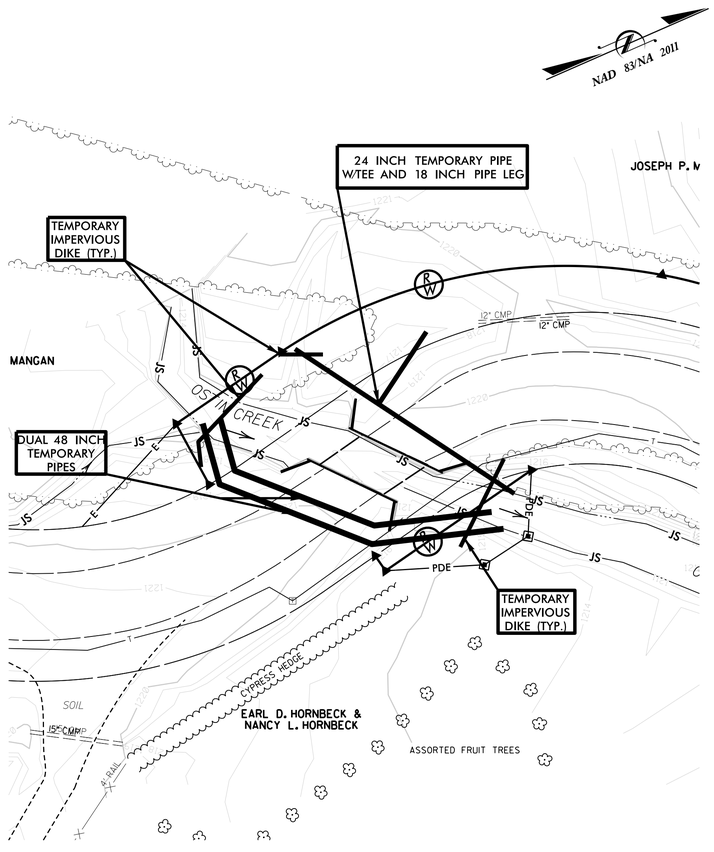
8/17/99

CULVERT CONSTRUCTION SEQUENCE STA. 12+94 –L–

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

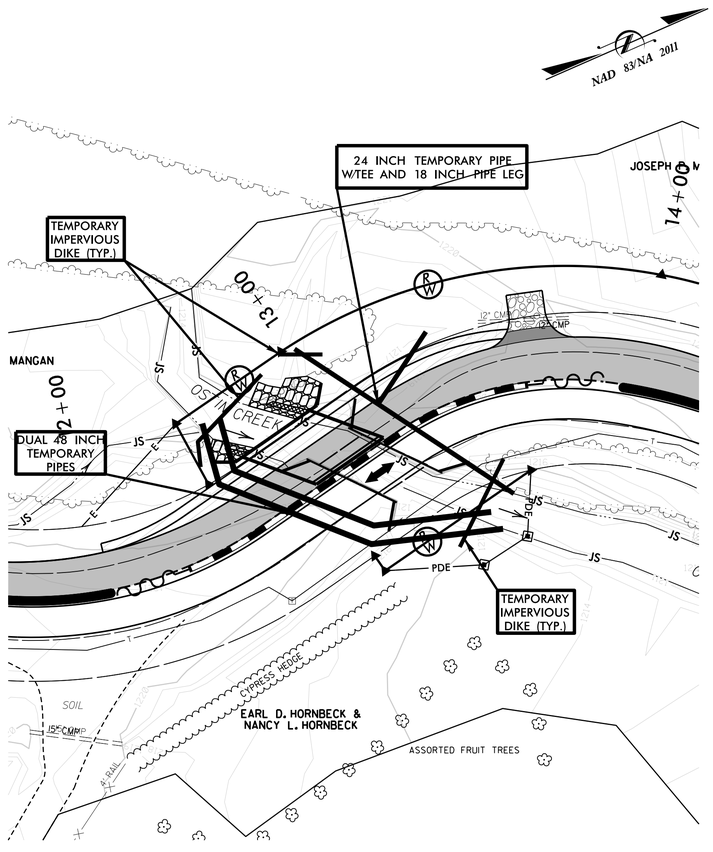
PHASE I

1. PLACE SPECIAL STILLING BASIN IN DESIRED LOCATION
2. INSTALL TEMPORARY DUAL 48" PIPES, TEMPORARY 24" PIPE W/TEE AND 18" PIPE LEG ACCORDING TO NCDOT'S BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL, AND IMPERVIOUS DIKES.
3. PUMP IMPOUNDED FLOW TO SPECIAL STILLING BASIN



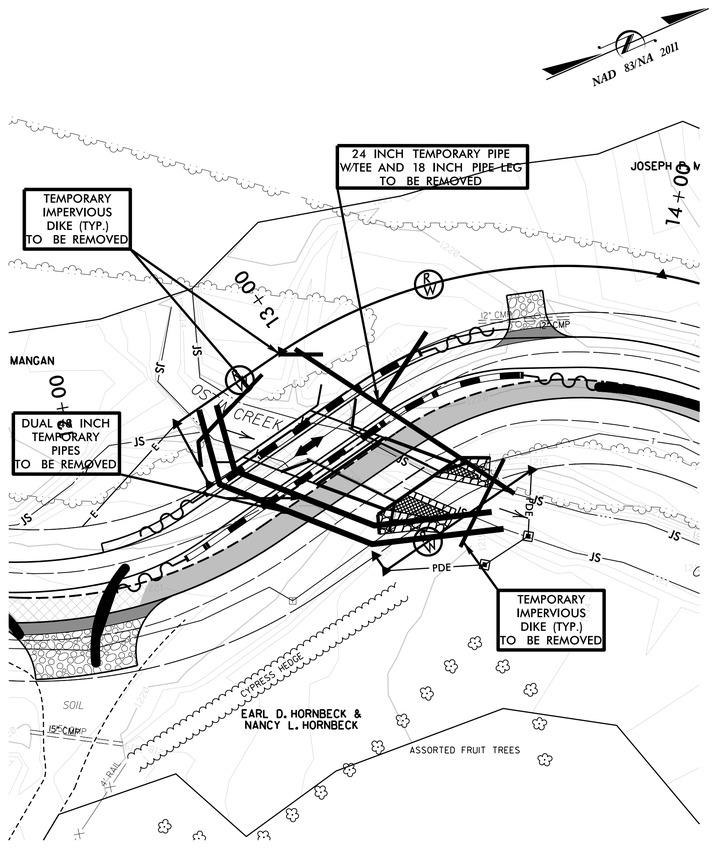
PHASE II

4. INSTALL TRAFFIC CONTROL PLAN STAGE 1 APPROACHES AND TRAFFIC CONTROL DEVICES
5. REMOVE EXISTING BRIDGE AS NEEDED FOR STAGE 1 OF TRAFFIC CONTROL PLAN
6. INSTALL 26' PORTION OF ALUMINUM BOX CULVERT (ABC) AS INDICATED IN STAGE 1 AND CONSTRUCT UPSTREAM CULVERT BENCHES.



PHASE III

8. SWITCH TO STAGE 2 OF TRAFFIC CONTROL PLAN
9. INSTALL STAGE 2 (REMAINING) PORTION OF ABC AND CONSTRUCT THE DOWNSTREAM CULVERT BENCHES
10. REMOVE TEMPORARY DIKES, TEMPORARY PIPES AND SPECIAL STILLING BASIN



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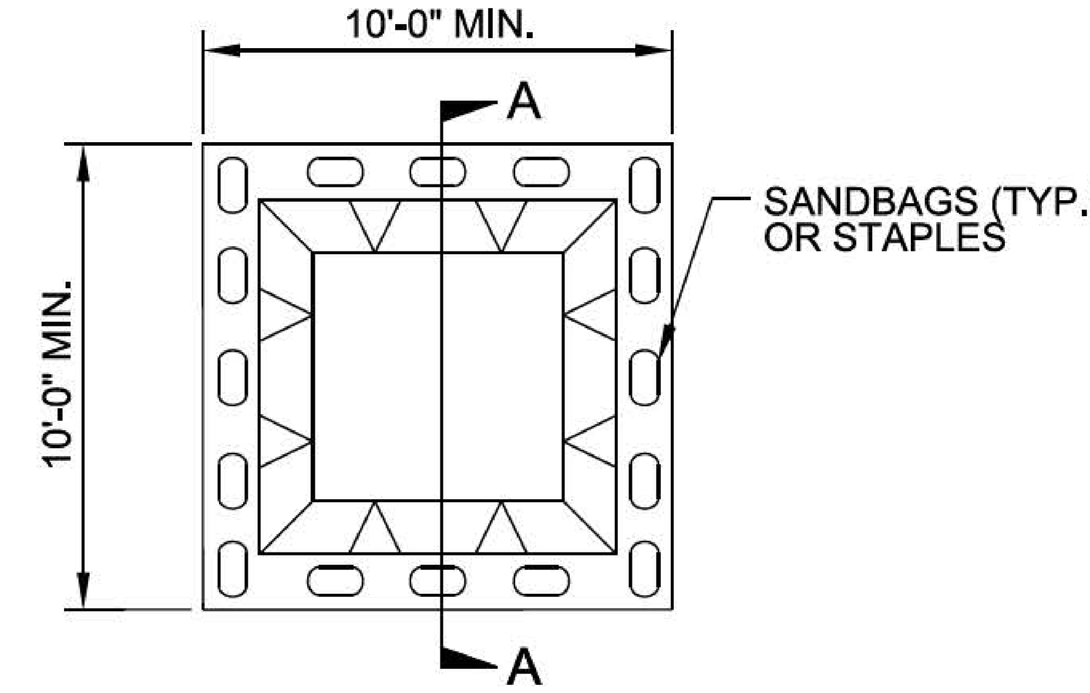
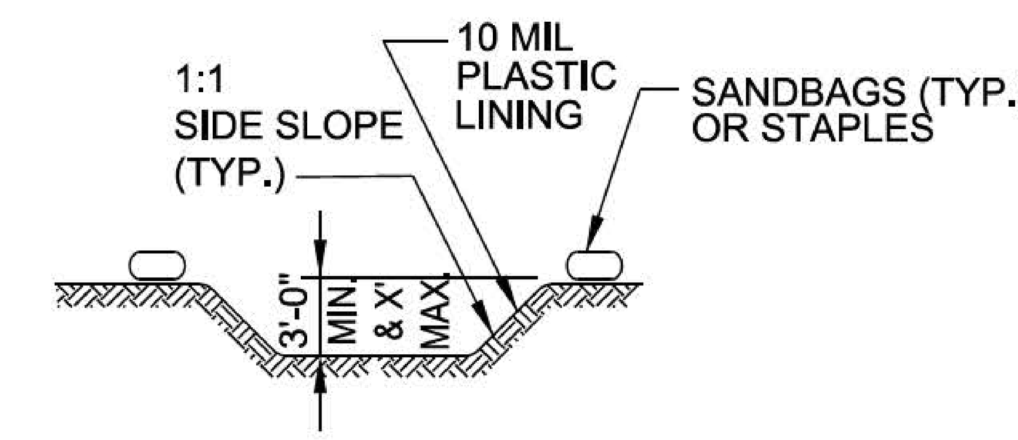
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	EC-2C

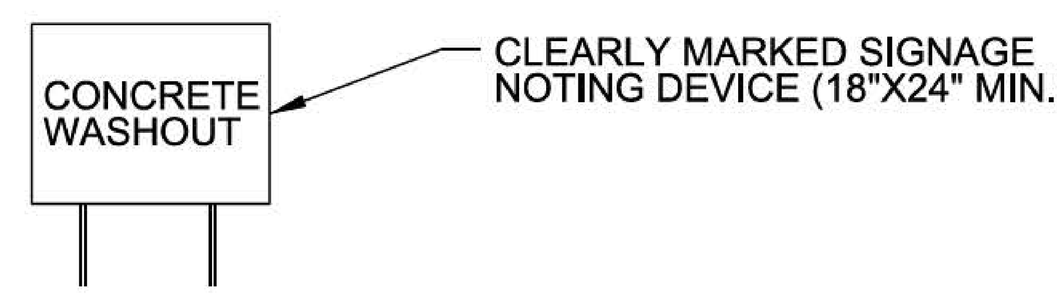
8/17/99

REVISIONS

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER







SECTION A-A

NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

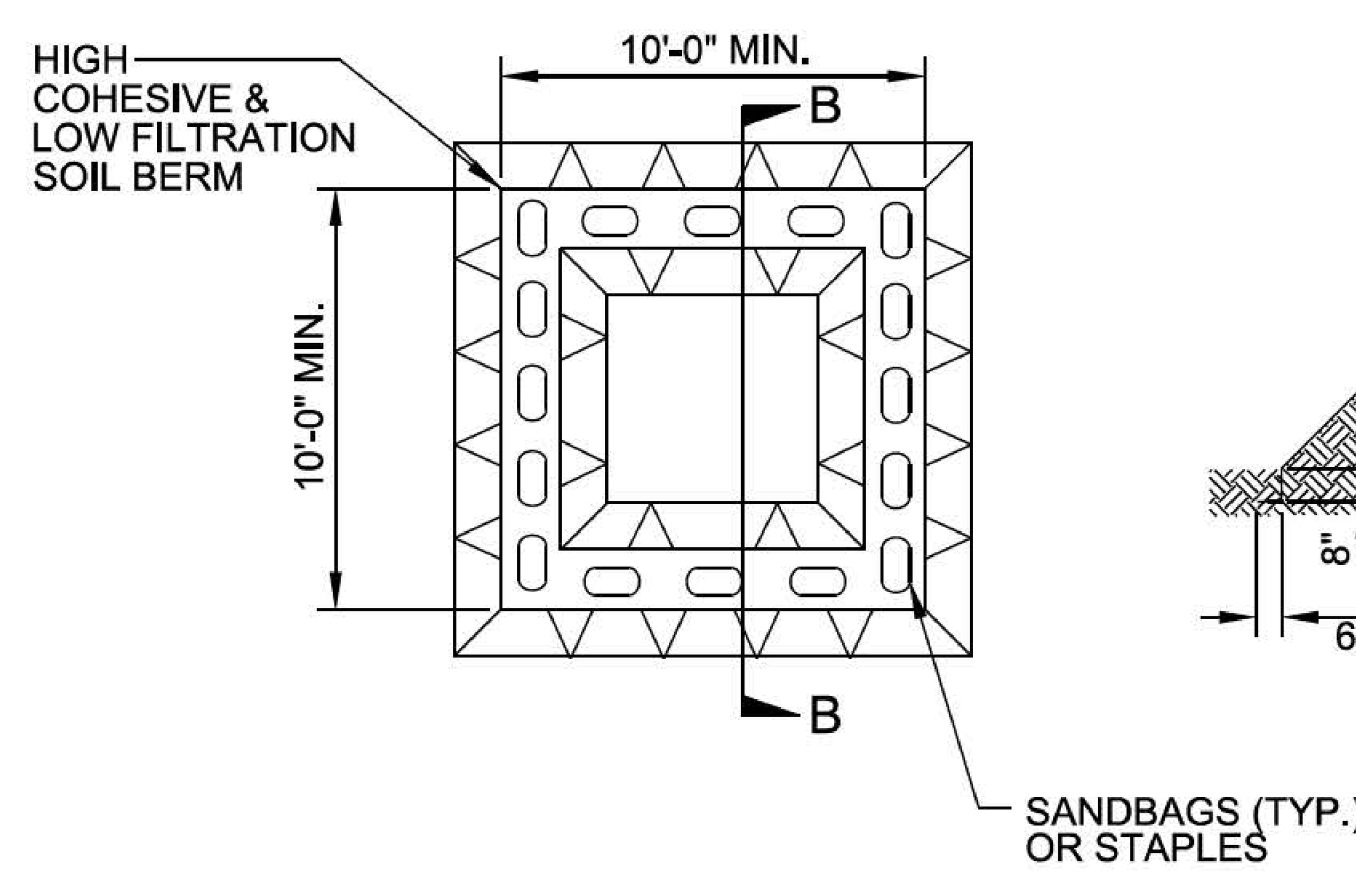
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.

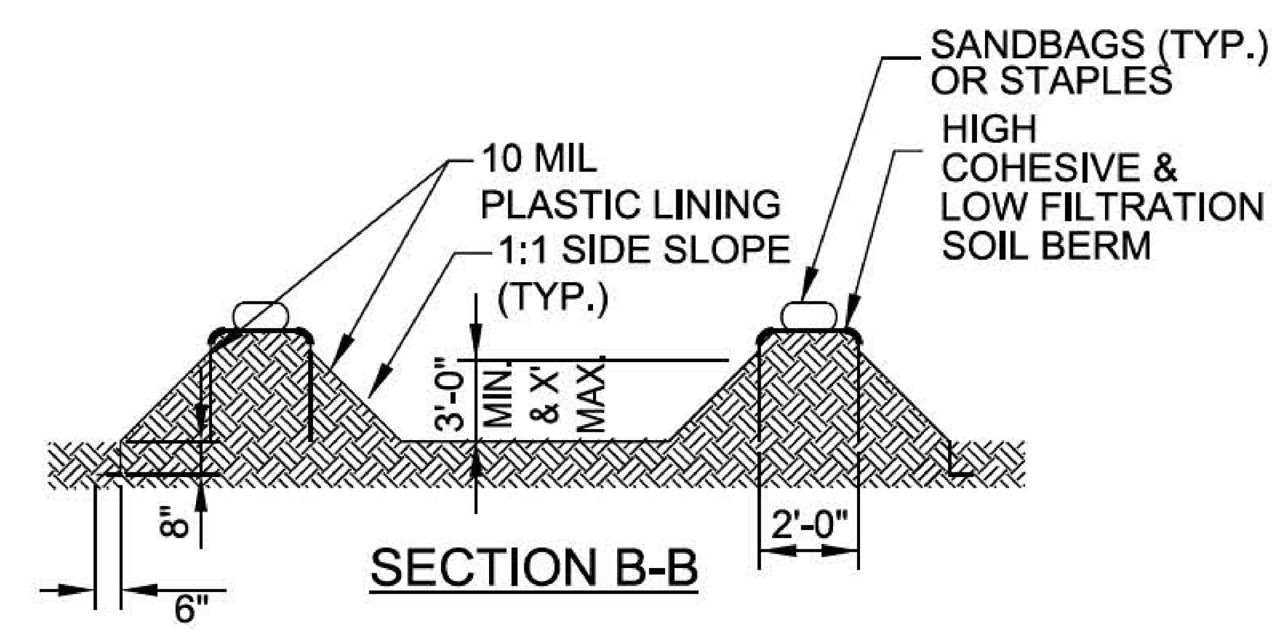
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

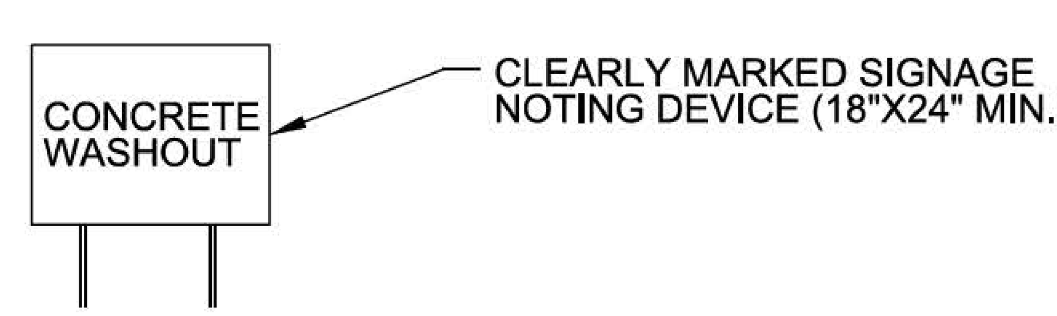
BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE





SECTION B-B



NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

1/28/2019
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PROJECT REFERENCE NO.	SHEET NO.
I7BPJ4.RJI6	EC-3

M A Engineering Consultants, Inc. NC License: F-0160
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

EXCELSIOR MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
			SUBTOTAL		0
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					2370
				TOTAL	2370
				SAY	2400

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

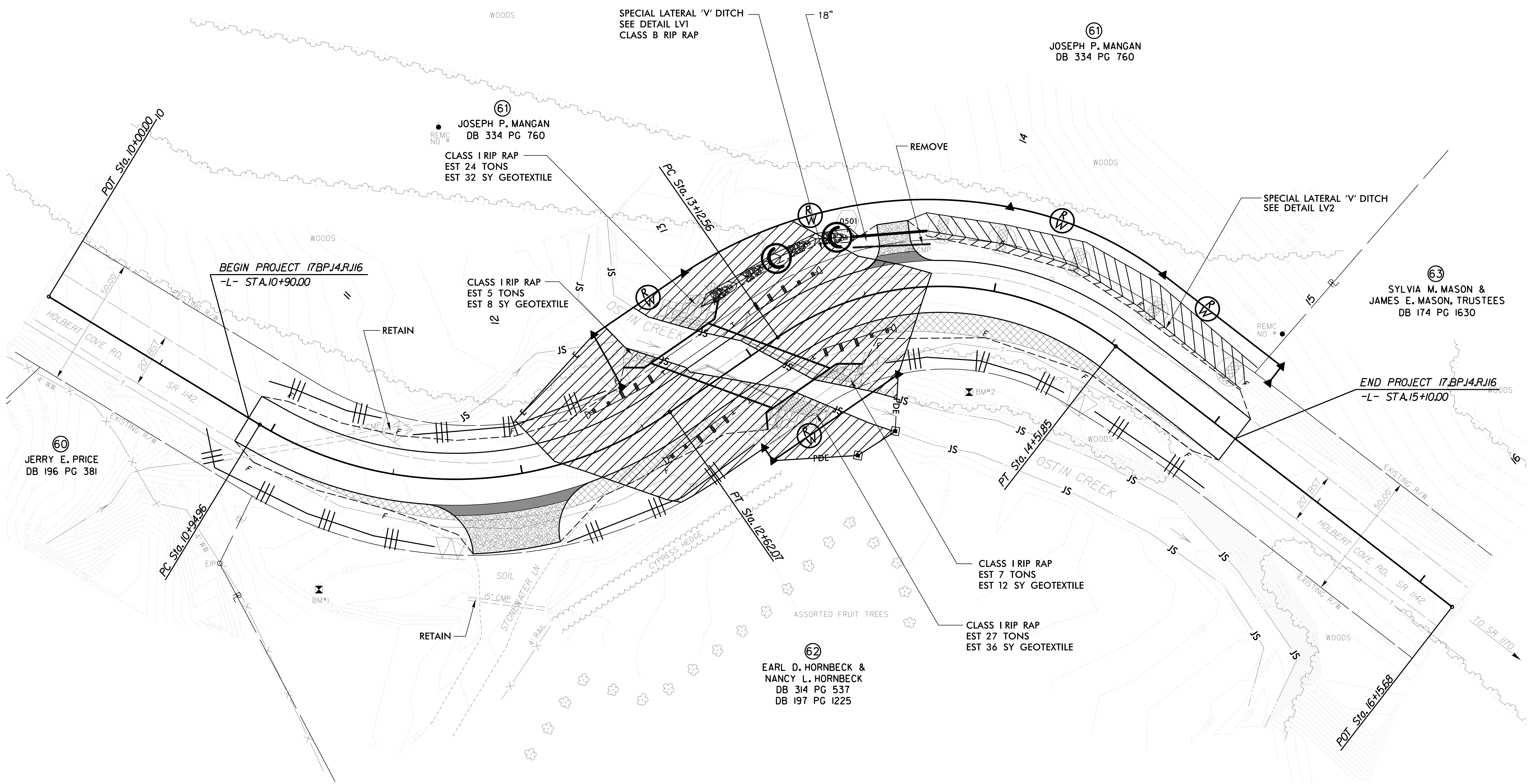
SOIL STABILIZATION TIME FRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

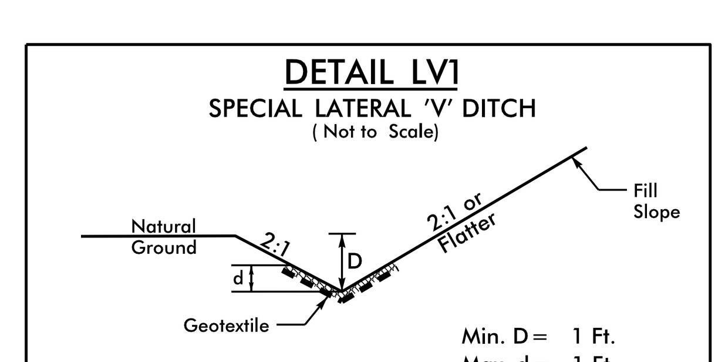
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.116	EC–4/CONST.–4
POLK COUNTY	CULVERT #740125

M A Engineering Consultants, Inc. NC License: F-0160
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

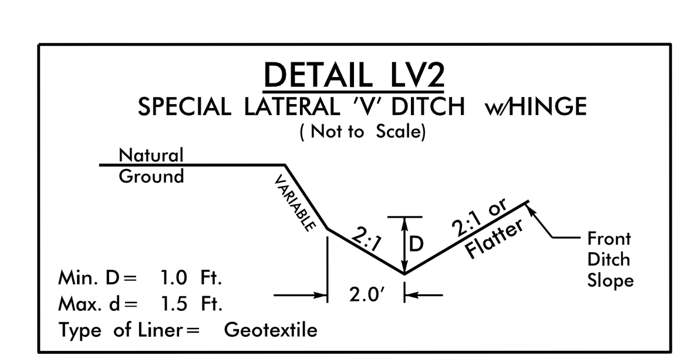
NAD 83/NA 2011


WOODS
SPECIAL LATERAL 'V' DITCH
SEE DETAIL LV1
CLASS B RIP RAP
18"
61
JOSEPH P. MANGAN
DB 334 PG 760
REMC NO #
CLASS I RIP RAP
EST 24 TONS
EST 32 SY GEOTEXTILE
REMOVE
POT Sta. 10+00.00
BEGIN PROJECT 17BP.14.R.116
-L- STA. 10+90.00
RETAIN
CLASS I RIP RAP
EST 5 TONS
EST 8 SY GEOTEXTILE
PC Sta. 13+12.56
OSTIN CREEK
HOLBERT COVE RD.
SR 1142
EXISTING R/W
50.00'
20' BST
4' WW
24" CMP
0501
SPECIAL LATERAL 'V' DITCH
SEE DETAIL LV2
63
SYLVIA M. MASON &
JAMES E. MASON, TRUSTEES
DB 174 PG 1630
END PROJECT 17.BP.14.R.116
-L- STA. 15+10.00
BM#2
PDE
PT Sta. 14+51.85
60
JERRY E. PRICE
DB 196 PG 381
PC Sta. 10+94.96
EIP
BM#1
SOIL
15" CMP
STONEWATER LN
4' RAIL
CYPRESS HEDGE
PT Sta. 12+62.07
ASSORTED FRUIT TREES
CLASS I RIP RAP
EST 7 TONS
EST 12 SY GEOTEXTILE
CLASS I RIP RAP
EST 27 TONS
EST 36 SY GEOTEXTILE
62
EARL D. HORNBECK &
NANCY L. HORNBECK
DB 314 PG 537
DB 197 PG 1225
POT Sta. 16+15.68
TO SR 1170

PAVEMENT REMOVAL
FOR PROFILE SEE PLAN SHEET 5
FOR CULVERT SEE SHEETS C-1 THRU C-5



FROM -L- STA. 12+95 LT TO STA. 13+50 LT



FROM -L- STA. 13+50 LT TO STA. 15+00 LT

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.RJ.16	EC-RF-1

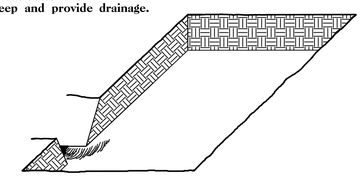
PLANTING DETAILS

SEEDLING / LINER BAREROOT PLANTING DETAIL

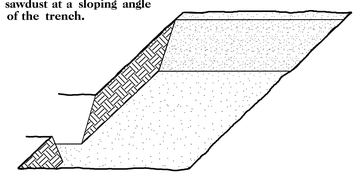
HEALING IN

1. Locate a healing–in site in a shady, well protected area.

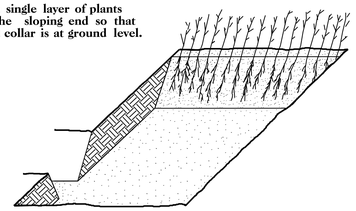
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



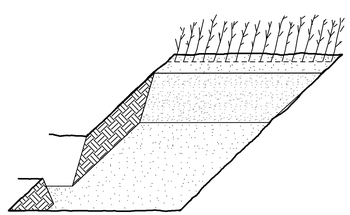
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

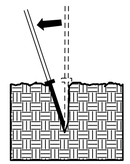


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

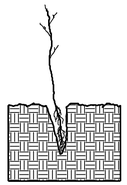


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

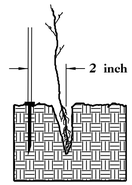
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



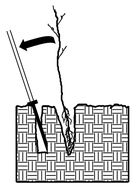
1. Insert planting bar as shown and pull handle toward planter.



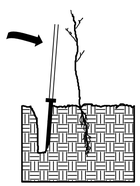
2. Remove planting bar and place seedling at correct depth.



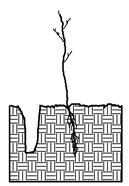
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.

ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

☐ TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in – 18 in BR
25%	PLATANUS OCCIDENTALIS	SYCAMORE	12 in – 18 in BR
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	12 in – 18 in BR
25%	BETULA NIGRA	RIVER BIRCH	12 in – 18 in BR

REFORESTATION DETAIL SHEET

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